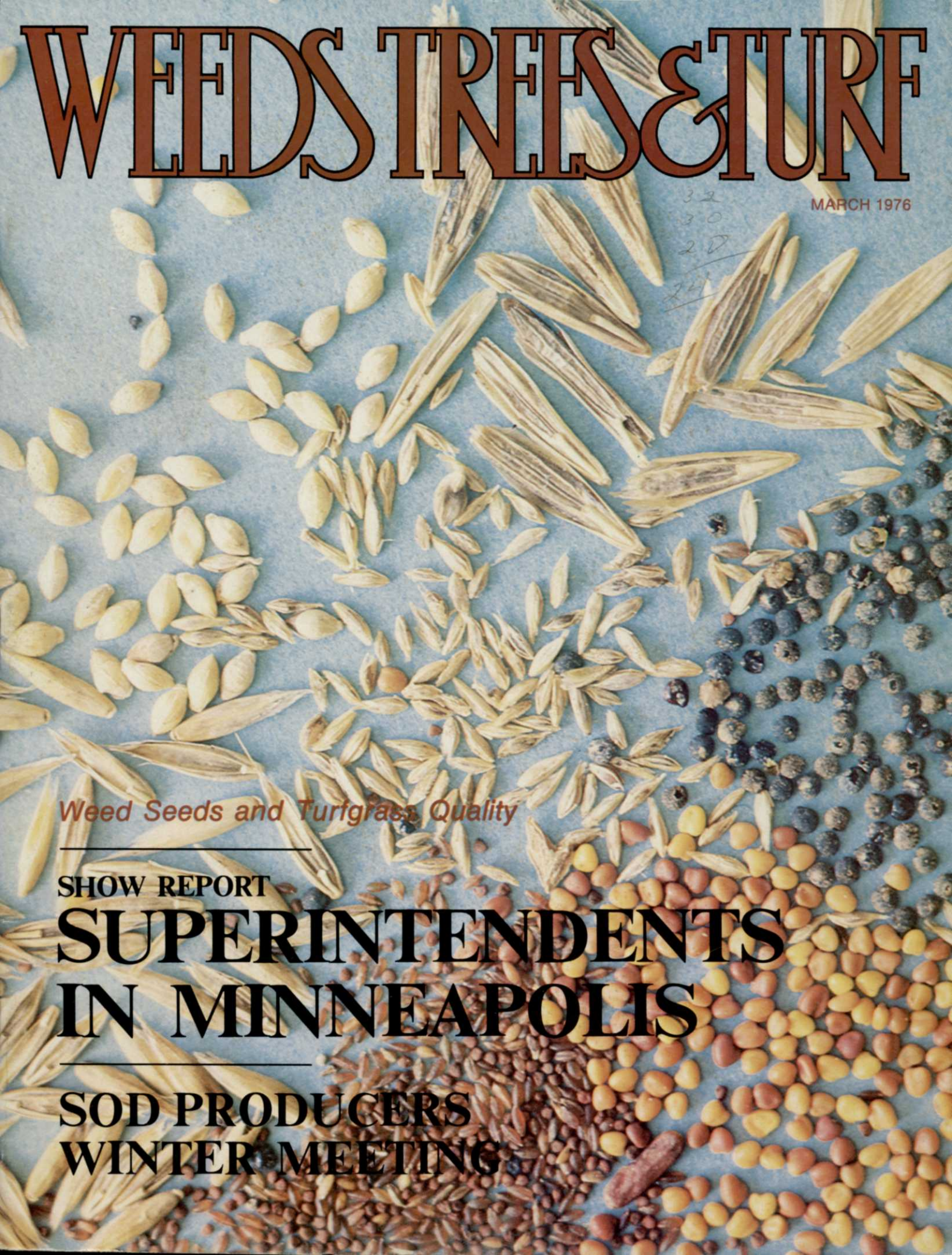
WEEDS TREES & TURF

MARCH 1976



Weed Seeds and Turfgrass Quality

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WEEDS TREES & TURF®

March 1976, Vol. 15, No. 3

14 **The Basis for Turfgrass Success** — Quality control of grass seed is where it all begins for the turfgrass manager to make sure he has as close to a weed-free stand as he needs. This is a report on Seed Technology, Inc., Marysville, Ohio, and how they test seeds.

19 **Tree Feeder System Aids Washington Elms** — One of the biggest projects connected with the nation's anniversary is Bicentennial Mall in Washington, D.C. Construction of the mall endangered 120 native American elms that had stood for over 75 years, but a new tree-feeding system was utilized.

20 **Sod Producers Updated in Clearwater** — Almost 200 members of the American Sod Producers Association traveled to Florida for their winter meeting, and WEEDS TREES & TURF was there to report.

24 **Malpass Chosen GCSAA President in Minneapolis** — Over 3,000 persons packed Minneapolis Auditorium and Convention Hall for the 47th Golf Course Superintendents of America turf show and conference. A four-page picture report by the WEEDS TREES & TURF staff.

32 **New Jersey Turf Expo** — In only its second year the combination of the well-known New Jersey Turfgrass Conference and a trade show drew 700 persons to Cherry Hill.

42 **New Brush Control Concepts** — Portland, Maine arborist Keith Jones has started a brush control program for several areas in his city using a new brush control agent.

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Single Copy Price: $1.00 for current and all back issues. Foreign $1.50. Subscription Rates: WEEDS TREES AND TURF is mailed free, within the U.S. and possessions and Canada, to qualified persons engaged in the vegetation care industry and related fields in controlled circulation categories. Non-qualified subscriptions in the U.S. and Canada are $10.00 per year; other countries, $12.00 per year. Controlled circulation postage paid at Cleveland, Ohio 44101.

PUBLISHED MONTHLY BY
THE HARVEST PUBLISHING CO.
9800 Detroit Ave.
Cleveland, Ohio 44102
(216) 651-5500

HUGH CHRONISTER
PUBLISHER

ROBERT E. EARLEY. JR.
MANAGING EDITOR

OPERATIONS

PAUL BALTIMORE
DIRECTOR OF OPERATIONS

DARRELL GILBERT
PRODUCTION MANAGER

DONALD D. LANGLEY
DIRECTOR OF CIRCULATION

ADVERTISING

HEADQUARTERS: 9800 Detroit Ave.
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RICHARD J. W. FOSTER
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THE COVER — Common foreign matter found in many seed lots: Poa annua, center; lamb's quarter, brown and black seed at left center; smooth brome, upper left; giant foxtail, upper right; tall fescue, right center; chickweed, red seed at lower right; and white clover, yellow seed at bottom.

For ad on page 2 circle 103 on free information card
For ad on page 3 circle 112 on free information card

Government News·Business

The white amur controversy goes on. Florida has placed a temporary moratorium on further stocking of the fish in state waters, according to the Aquatic Plant Management Society. The U. S. Army Corps of Engineers and several Florida state and county agencies have initiated a long-term study in Lake Conway in Orlando. The cooperative study between Florida Game and Freshwater Fish Commission and Department of Natural Resources did not resolve the issue of effect of the white amur on the native fish populations. Several lakes in the state of Florida that have weed problems were stocked with white amur before the stocking maratorium was agreed upon. These lakes are being monitored by various agencies. Weed control results appear too variable in these lakes.

Warren Shaw has been named staff scientist for Weed Science on the National Program Staff of the Agricultural Research Service, U. S. Department of Agriculture. He replaces William Ennis, Jr., who retired. Shaw was formerly the NPS staff scientist for plant physiology and growth regulators from 1972 through last year. He is a past president of the Weed Science Society of America.

Bell Helicopter Co. is now Bell Helicopter Textron. The company is based in Fort Worth, Texas. Bell president James F. Atkins said the name change comes as part of a new corporate-wide identification program of Textron, Inc. for all its divisions. The new identification program is intended to maintain the valuable equities and public recognition of its divisions as well as to identify them visually and verbally with the Textron parent company.

The ever-increasing intrusion of the Occupational Safety and Health Administration and the Environmental Protection Agency may be unconstitutional, according to a Florida golf course superintendent. Dan Hall, superintendent at the Countryside Country Club in Clearwater, spoke at the recent Florida State Golf Association Fall Management Seminar and said: "Gentlemen, we are talking about money. The superintendent is liable, the club is liable as a whole, and club officers and directors are liable if these laws are not kept." He said he feels some of the powers granted to the EPA in recent years are unconstitutional but urged that club managers and superintendents make themselves thoroughly aware of EPA requirements to avoid fines and expensive litigation in the future.

PVC pipe price increases are tied to federal rules, not demand, manufacturers have charged. Precision Polymers, Inc. a national plastic pipe and fittings maker based in Mountainside, N. J., said it is increasing prices of all its polyvinyl chloride pipe and fittings 10 percent last month, and probably by an additional six to eight percent this month. Other companies also have raised prices. Marvin Rosenblum, president of the company, said the major factor in the need for increased prices is the sharply rising cost of vinyl chloride, the major ingredient in PVC pipe. He attributed this to federal standards and to the anticipation of further federal standards. In addition to other restrictions, the federal Environmental Protection Agency has proposed a standard for manufacturers that would require a 90 percent cut in air emissions of vinyl chloride. The agency itself estimated this would cost manufacturers $198 million plus another $70 million each year to maintain the required emission of the cancer-linked chemical.

You can't beat a boom for precision.

When you're spraying 3 gal/1000 sq ft of a touchy chemical mix, you need all the control of volume, direction and coverage you can get. And you can see the precision you get with our 1010 utility vehicle sprayer above. It treats a green with care. 19 nozzles on 10" spacings give 15 ft of even coverage and controlled pressure drives the chemical into the problem zone. With stainless steel tank and mechanical agitation. Plus optional hose and gun for spot spraying and tree work. For tees, greens, fairways and around the clubhouse, for fungus, weeds and insects, we have a full range of boom sprayers. And labor-saving air sprayers for turf and tree care. But most important, we have the machines that provide the spray power to meet every professional turf need. Call your local FMC Dealer or call Jack Custer at (501) 935-1970, FMC Corporation, Agricultural Machinery Division, 5601 E. Highland Drive, Jonesboro, Ark. 72401.

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Editorial

"The game of golf," University of Maryland agronomist Dr. John R. Hall explained last month, "has been a source of leadership for what's happening in the green industry."

We concur, of course, and hasten to add that the world of golf business has fostered much of the motivation for this leadership as well.

In these days of society's pressures, a higher rate of government participation in industry affairs and the changing needs in our country, qualities of leadership and motivation are becoming more and more important.

Dr. Hall suggests that politics, the energy crisis, food scarcities and similar subjects are going to have quite an impact on golf course management of the future.

For one thing, many new golf courses are going to be on poorer land. There will be more land use restrictions, and alternate uses — bike paths, picnic areas, etc. — are sure to be major considerations for golf courses of the future.

Such technologies as drip irrigation, low nitrogen varieties and growth inhibitors are on their way in.

In a sense, motivation and leadership have brought us to this point. And what a proud accomplishment and heritage golf course management can claim.

The rolling fairways and luxury greens of this land are a tribute to man's science and civilization. But, more than the splendid manicured putting surface, the nation's golf courses have become a monument to man's union with nature.

The golf course has become an oasis in a world of concrete and dust. It is a breath of fresh air. A reward.

The concept of the golf course, moreover, as a playground for the rich, an oasis for kings, a retreat for captains of industry, is having less and less to do with the concept of golf in America.

And Dr. Hall issued the challenge of the decade as he spoke to members of the Golf Course Superintendents Association of America convention in Minneapolis.

"We have to make golf," he said,"the common man's game."

We join Dr. Hall in this challenge. It is an important goal for the survival of quality golf and golf lands. And this, we believe, is necessary in America.

Hesston Front Runner.®
It cuts costs at Host Farm. Just like it will for you.

"We have over two miles of rail fences. And the Front Runner's 80" batwing mower reaches under these fences, cutting hand trimming to almost nothing... it gets in everywhere. We tried regular mowers for this, but they didn't work. Articulated steering really does the job!

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Hesston Front Runner. It works for Dwight Brubaker every day at Host Farm.
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For ad on following page circle 104 on free information card

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- Less pounds last longer!
- Gets most tough weeds and most brush others leave behind!
- Gets most tenacious vines, brambles and woody plants!
- Is remarkably resistant to leaching and lateral movement!

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For the past several years, SPIKE has been tested in actual field situations with commercial equipment. When applied in accordance with label directions, SPIKE will result in a high level of long lasting total vegetation control.

Test plot demonstrates dramatic result of single application of SPIKE. ▶

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Because of SPIKE's features

- Less pounds last longer
- Gets most tough to control weeds and brush
- Gets most tenacious woody vines and brambles
- Is remarkably resistant to leaching and lateral movement

. . SPIKE belongs in your total vegetation program.

"Before" and "after" views of the same test plot clearly demonstrate SPIKE's ability to control brush and woody vegetation. ▶

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. . . that's what all of SPIKE'S abilities add up to. SPIKE is a proven total vegetation control product that is truly tough on weeds! What's your tough vegetation control problem? Whatever it is, consider SPIKE an essential weapon in your chemical arsenal. Contact your ELANCO distributor for full details on SPIKE . . . the tough one for total vegetation control!

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With this formidable array of armament on your side, you have a broad spectrum turf management program that can ward off just about any attack from weeds or fungi or golfers.

And you can manage it all with surprising economy. Chipco® products protect the green of your turf without straining the green in your budget.

Just try any one of them, and you'll want the entire arsenal. Because once you use a Chipco anything, you'll soon be using Chipco everything else.

Chipco Buctril® gives early control of broadleaf weeds in newly planted grasses for sod or seed production.

Chipco Turf Herbicide MCPP controls clover, chickweed, knotweed and other surface creeping weeds and is safe and effective for use on most bent grasses.

Chipco Turf Kleen is a broad spectrum herbicide that controls broadleaf and surface creeping weeds with a wide margin of safety around trees and shrubs.

Chipco Spot Kleen is a systemic fungicide for control of dollar spot, Fusarium blight, stripe smut, large brown patch and copper spot.

Chipco Thiram 75 prevents and controls snow mold, large brown patch and dollar spot. Used with Spot Kleen, it offers a complete disease control program.

Chipco Microgreen Liquid prevents chlorosis which results in long lasting deep green color, more root growth and less desiccation.

Chipco Turf Herbicide D is a general purpose broadleaf herbicide ideally suited where economical control is desired.

Chipco Spreader Activator is a quality adjuvant to increase the efficiency and effectiveness of turf chemicals.

Chipco Crab Kleen gives economical and selective post-emergence control of crab grass, chickweed and other grassy weeds in established turf.

Rhodia

Rhodia Inc., Agricultural Division, Monmouth Junction, New Jersey 08852

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SEED QUALITY CONTROL

The Basis for Turfgrass Success

Seed quality is only the first of many important facets in getting a viable stand of turfgrass. But it is probably the most important step in that a grower needs to know the specific analysis of seed in order to manage intelligently.

Turf seed analysis is available today — but complete testing is not the norm. Only a few seed companies do more than the various state laws demand. Those who do earn the premium price they have to get for their seed. For the user, the extra cost is often considered nominal when compared to the direct value he receives.

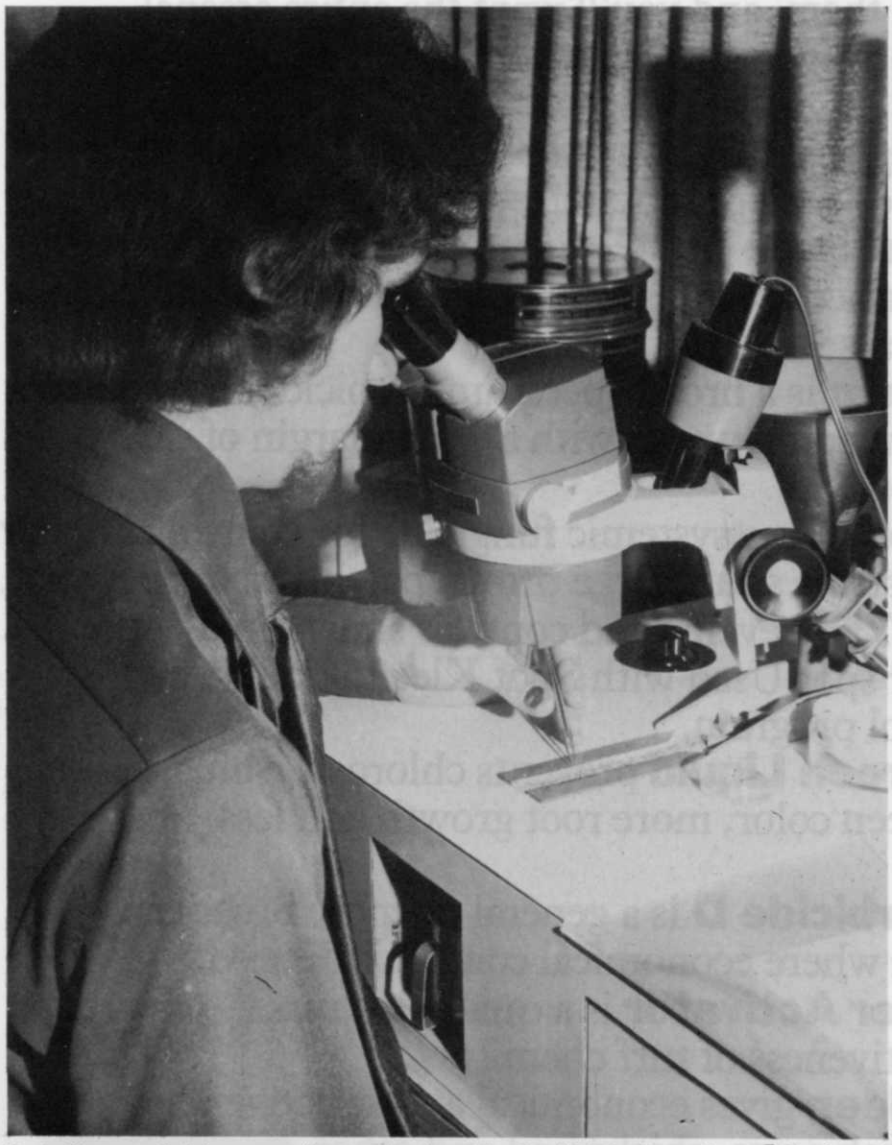
For example, state laws require only that one gram of bluegrass seed for up to 66,000 pounds of seed be tested for the percentage of crop, inert, weed and pure seed. Commercial labs doing such testing readily admit the single gram tested is insufficient to pinpoint impurities which may exist.

The 25-gram test demanded by some companies and the 100-gram tests which are much more expensive go much further in giving both seller and buyer the information necessary to determine worth of a seed lot.

Seed Technology, Inc., at Marysville, Ohio, has tested for most major U.S. and some foreign countries over a 20-year period. Tests are made on a custom basis — and the seed house orders options to meet its own set of seed standards. All options extend well beyond the legal requirements.

Foreign seeds are rated as (A) uncontrollable, (B) controllable, or (C) no problem. The specific seeds, whether weed or crop seed, vary by the particular area of the country. Some seeds which are foreign when found in a turfgrass seed lot are problems in the Midwest but may be no problem on the west coast. The classifications have been worked out in cooperation with university researchers in the various geographic areas of the nation and the seed analysis is made on each test accordingly.

Seed quality standards — the highest legally required in the nation and set up by the state of Washington for certified sod quality seed — call for a statement of minimum purity, minimum germination, the maximum percent of certain other crop seed (0.1% or more in some cases allowable), and the maximum percent of weed seed (0.03% allowable). However, the allowable other crop seed excludes such thing as ryegrass, orchardgrass, timothy, bentgrass, big bluegrass, Canada bluegrass except for Kentucky bluegrasses, *Poa trivialis*, smooth bromegrass, reed canary grass tall fescue and clover. The allowable weed seed excludes such things as dock, chickweed, crabgrass, plantain, black medic, annual bluegrass, velvet-



Kevin Kern, technician, uses vibrator developed by Seed Technology, Inc., to check turfgrass seed sample. Vibrator directs seed past operator at a variable speed rate depending on type and condition of seed. Magnification range is 1 ½ to 25 power. Unit permits careful examination of seed at a rate 10 times faster than hand method, which also includes use of a hand lens.

TEMPERATURES ARE UP AND RAINFALL IS DOWN.

USE YOUR CUSHMAN.

Keeping your turf green during a long hot spell means getting water to the root zone before the sun can bake the earth. And that can develop into a race between you and the sun. What you need then is a method of quick aeration...a fast way to get water deep into the soil.

What you need is your Cushman Quick Aerator attachment.

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You choose from three aerating tines: deep slicing for delicate greens (with rear rollers that leave turf in playing condition), coring for fairways, or open spoon to help renovate the soil.

And like all Cushman equipment, the Turf-Truckster and Quick Aerator are built to last. Because we don't think product longevity is bad for business...we think it's the only way to do business.

With other accessories, your Cushman can spray, spike, dump and top dress. Use it. It's a lot more than basic transportation. It's a total turf-care system. Write for your Cushman Turf catalog today.

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EQUIPMENT

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Following are results of tests of one seed lot which shows the findings on one, 25, and 250 gram samples:

Purity 98.42 Crop 0.10 Inert 1.48 Weed 0.00 Germ 89%

1 gram test			25 gram test			250 gram test		
Ky Bluegrass	.10%	(C)	Ky Bluegrass	.10%	(C)	Poa annua	4	(A)
			Windgrass	126	(C)	Smooth Bromegrass	2	(A)
			Tansy	18	(C)	Bentgrass	4	(A)
						Chickweed	4	(B)
						Ky Bluegrass	.10%	(C)
						Windgrass	158	(C)
						Tansy	24	(C)
						Shepherds Purse	180	(C)
						Pigweed	68	(C)
						Small Seed false flax	20	(C)
						Henbit	10	(C)
						Peppergrass	4	(C)
						Ventenata Dubia	6	(C)
						Fine Fescue	4	(C)
						Black Medic	20	(C)

Note: The (A) classification represents uncontrollable seeds in the sample; the (B) classification is controllable; and the (C) group represent no problem.

grass and certain noxious weeds.

At first glance, these standards appear formidable. But, they do not include a requirement that other crop seed be listed.

Agencies producing and promoting certified seed recognize the inadequacy of the one gram seed sample results. They require 25 gram tests to ascertain whether seed is free of certain weeds such as quackgrass and wild garlic. But neither the government nor certification agencies require that other crop seeds be listed. The professional grower needs data on specific turf weeds and other crop seeds which may be in his seed lot.

Assume that a test shows one tenth of one percent crop seed and if that crop happens to be bentgrass, a factory lawn or a fairway could be exceedingly spotty. A 400-yard by 50-yard area would contain almost a million bentgrass seeds in the normal 200 pounds of bluegrass seed.

Or suppose the foreign crop seed is timothy, allowable in many states. A grower would be seeing a quarter million timothy seeds in the 400 x 50 yard lawn or fairway. In the case of tall fescue, he'd put down more than 50,000 seeds. These are examples. There are numerous others which need to be avoided.

Inert materials also need to be labeled for protection of the grower — but the law requires only that the percentage by weight be listed.

Competent technicians and equipment designed to do the job are conducive to accurate testing. At these laboratories an electronic evaluator is used to count seed, a vibrator has been designed to direct seed past the technician for evaluation and to literally shake the small seeds such as bent from the larger seeds to which it often clings.

Most important today for the turfgrass seed user, based on the thinking of researcher Dale Kern, president and founder, is that turfgrass seed analysis must be tailored to the needs of the grower who wants his seed analyzed. This requires (1) more seed be tested; (2) better equipment be used; and (3) that more complete reports be made available.

Kern goes beyond these suggestions in his own evaluation of seed testing as now being done. He believes that much more emphasis must be placed on the specific weed and/or crop seed which is found in seed. Even the gold label seed which demands a premium price does not include on the label the specific foreign seeds. It provides only the label. This simply means that once the seed comes up the grower could find a number of crop and weed seeds he did not expect and may not be able to readily identify. Some may be exceedingly harmful, and some be uncontrollable. Some could never be a problem.

For example, downy chess, nutgrass and speedwell are not restricted by law or agency standards, but present difficult management problems for the turfgrass professional. By contrast, windgrass, hairgrass, shepherds purse, and buttercup are also not listed as a rule, but at the same time do not offer major problems.

Only a more complete turf analysis report can forewarn the user, or aid in solving the problem prior to seeding. A grower must determine for his own area what his problem weeds are. Many which are big headaches in some areas (water foxtail in Wisconsin is an example) may be minor nuisances in other regions.

No longer can the grower depend on standards set by outside agencies, Vern said. He must know his seed and identify his own problems. A complete turf seed analysis is his first step. This identifies foreign seeds in the lot. The second step is to be sure that any foreign seeds which are problems to him are not seeded. □

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RID YOUR TURF OF...

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One early application of Broad-Spectrum TREX-SAN™ will kill the weeds that plague you now, thus also preventing their seeding and re-appearance next year. TREX-SAN combines the unique weed-killing properties of 2,4-D, MCPP and DICAMBA — their synergistic action in TREX-SAN provides the safest, most effective single herbicide known. We've seldom found a broadleaf weed TREX-SAN won't control. Yet it provides an extra tolerance of safety to fine turf and ornamental plantings when applied as directed. A single gallon of TREX-SAN treats *four full acres* to save you *money* . . . Single applications in spring and fall save you *time* . . . in achieving complete weed control. Order TREX-SAN from your Mallinckrodt distributor today.

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A quiet announcement:

You're in for a quiet surprise when you close the door of the iso-mounted cab on the new Ford 550 TLB

Who in the world but Ford can provide quiet, spacious, convenient work conditions like this? It's quiet because isolation mounts between the cab and the frame help reduce noise and vibration. Cab (optional) meets OSHA 90 dBA requirements for 8 hours.

The new Ford 550 cab is a great place to work, whether you're trenching to 15-foot depths, or moving capacity one-yard loads with the new Ford straight-arm loader. Controls are within easy, natural reach. Visibility is excellent in all directions. Operations are comfortable in the roomy cab.

See the new Ford 550, worthy successor to the famed Ford 4500 tractor-loader-backhoe. Visit your nearby Ford Tractor & Equipment dealer soon. See him for information on how to buy, lease, rent or finance.

Who in the world but Ford!

FORD TRACTORS

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Tree Feeder System Aids Washington Elms

The nation's capitol prepares for the country's 200th anniversary with an evangelical fervor. Construction, restoration and renovation is underway on almost every corner of the capitol, anticipating the millions of visitors who will make the trek to the tree-lined streets seeking a link with the historic atmosphere that permeates the city.

One of the biggest projects connected with the bicentennial is the Bicentennial Mall, a massive improvement project for the grassy stretch that lies between Capitol Hill and the Washington Monument. Vehicular traffic has been closed off, and 40-foot aggregate pathways installed to accomodate the crush of tourists that have already started the pilgrimmage.

The feeder is built around a 13-inch long cylinder, which has a plastic collar attached to it. The four-inch diameter tube is placed into an augered hole that has been backfilled with aggregate. Once the liner is in place and secured, a filter element which contains the necessary nutrients is inserted and the unit is capped.

Lining the boulevard, as they have for perhaps the last 75 years, are over 120 native American elm trees. Already designated as the official bicentennial tree in a ceremonial planting at the White House last year by Betty Ford, the elms are the main component of the mall project, and as such were priority-rated by the Capitol Park region of the National Park Service. Because of the construction involved in installing the pathways the length of the mall, the already-distressed trees were subjected to even more abuse.

Feeder roots that had lain in the heavily compacted soil surrounding the trees were disrupted, and as the aggregate was installed the trees' capacity for obtaining nutrients was further diminished. Clearly a method of delivering food and water to the trees was needed. Elwood Rensch, registered landscape architect and the government coordinator on the job, decided to try the W.A.N.E. (Water, Air and Nutritional Exchange) Tree System, which had been developed precisely for this type of situation.

According to Rensch, "The original design of the walkways did not include anything to protect the trees. Because of the hard surface of the sidewalk and the 40-foot width, we knew we had to do something to help the trees." He contacted Wayne Smith, head of A.A.A. Tree Service in Tampa, Fla. Smith is the inventor of the system; he developed and tested the system in his garage. Smith arranged for shipment of the 1,100 units needed for the job.

The system is a piece of equipment that is placed at regular intervals around the tree, the total number needed depending on tree size and the particular situation of the tree. A PVC liner is inserted into augered holes that have been backfilled with about six inches of gravel. Then, a specially designed filter element is inserted and the unit is capped with one of two different plastic lids.

Designed to use a slow-release fertilizer mix, a vapor-release packet or a custom mix of nutrients, the units are protected from damage due to the collars and lids that are attached to the four-inch diameter liner. Able to withstand heavy vehicular traffic, the rise above grade is 3/32-inch after installation. The rest of the 13-inch unit penetrates well into the feeder root zone of the tree, allowing an even distribution of water and nutrients. In northern areas, a frost anchor is provided, while more temperate regions need only an epoxy bond between the top collar and the paved surface for permanent placement. □

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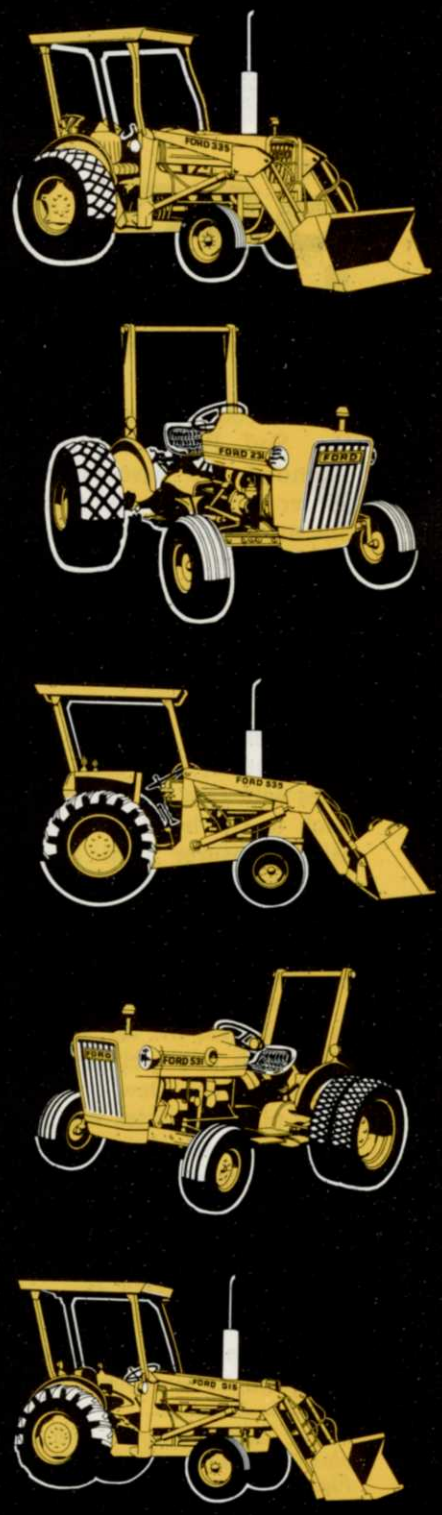
The new Fords...

Now, 16 new Ford grounds maintenance power units. Tractor-loaders, low center-of-gravity tractors, all-purpose and utility models.



See them now!

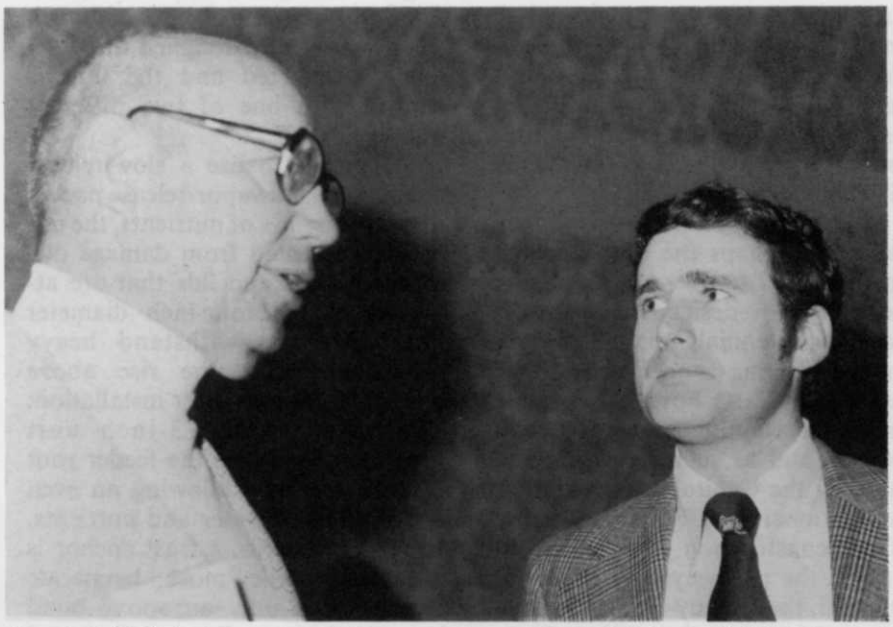
Sod Producers Updated in Clearwater

Almost 200 members of the American Sod Producers Association attended the association's midwinter conference last month at the Sheraton-Sand Key Hotel in Clearwater Beach, Fla. Many members of the association brought their wives and families along on the trip to take in the sights of sunny Florida, which turned out not to be so sunny after all. The weather held up for a dusty field trip to Pursley Grass Co. in Palmetto, and then opened its skies with rain for the long bus ride back to the hotel. Indoors, association treasurer Tom Thornton of Thornton's Turf Nursery, Elgin, Ill., put together a well-attended educational session of many nationally known speakers.

Tom Mascaro, of Safe-T-Lawn in Miami led off the speaker's session with his well-practiced talk "Dew Is Not Dew". He said the grass plant exudates water which is sticky and can be associated with some diseases. He said dollar spot spores grow better in this medium. He said the spore germinates in the droplet and moves up and destroys the blade. He said the water can drop down and if there is quickly available nitrogen there, its mixture will produce leaf burn. Spores also move more rapidly in exuded water. He said there is a definite relationship with this water and disease. He said it is time to take the existence of this water into consideration in turf management, and that early morning watering dilutes the water and makes it less harmful to the grass. He also said each type of grass exudes water at different rates.

Dr. Henry Indyk of Rutgers University led a panel of experts discussing new products on the market for weed control. Dr. Everett Burke of the Agricultural Experiment Station in Fort Lauderdale, Fla., discussed "Kerb" for control of *Poa annua* on warm-season grasses. Paul Jacquemin of O.M. Scotts, Inc., Marysville, Ohio, discussed his company's new "Selective *Poa annua* Control" which is now available in the Midwest and part of the East. Steve Carlyle, of Ag-Division, Rhodia in Gainesville, discussed his company's "Ronstar" a preemergence herbicide for crabgrass. Dr. Al Turgeon of the University of Illinois discussed use of "Bosagran" for control of yellow nut-

Above: Soil fumigation with a layer of plastic at Pursley Grass Co., Palmetto, Fla., the site of a bus tour at the American Sod Producers Association winter conference.



American Sod Producers Association executive secretary Bob Garey (left) with association legal counsel Bill Harding at the meeting banquet.

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Whether you purchase seedlings for permanent planting or prefer to grow your own stock for later transplanting, you'll be impressed with our wide variety of fir, pine and spruce seedlings. Northern-grown for hardiness, they've all been personally cared for by the owner to assure that you receive only the very best.

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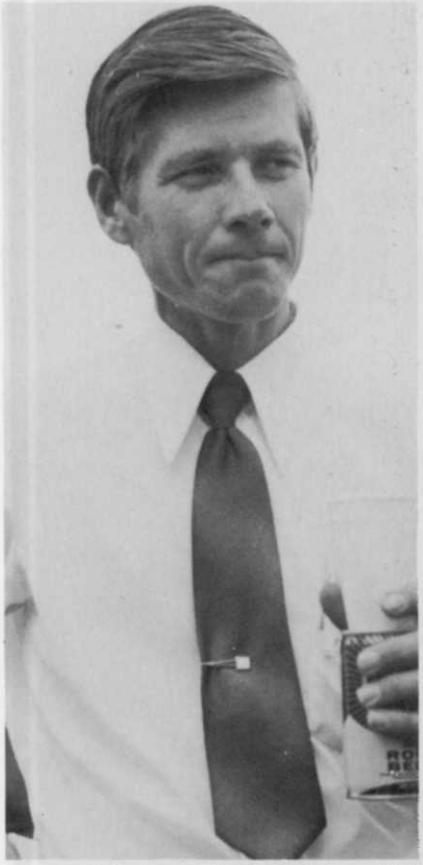
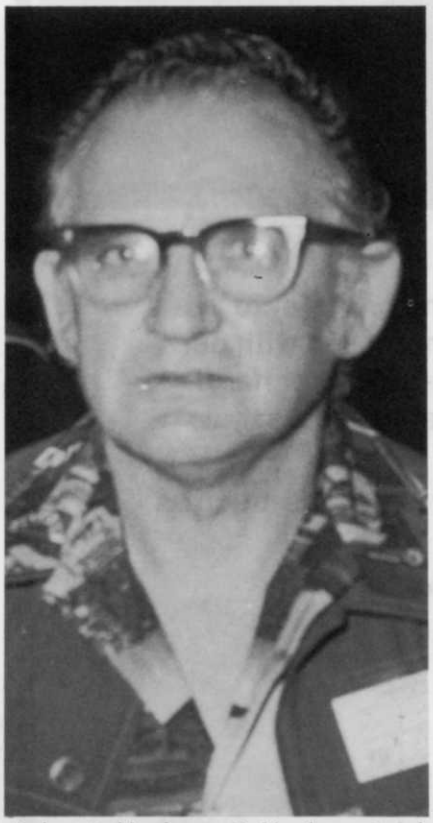


Leonard Wittig, of Wittig Sod Farm, Boling, Texas at a break from the bus tour.



Robert Bobbenhouse, Bobbenhouse Landscaping, Des Moines, Iowa at the annual banquet.

sedge. Ed Jordan, senior sales specialist for Monsanto, discussed his company's "Roundup" for perennial weed control.

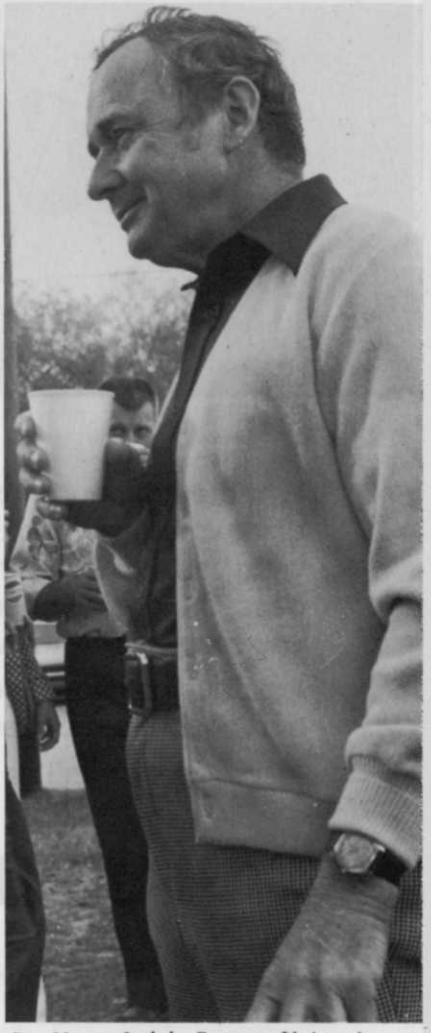
Doyle Jacklin of Vaughan-Jacklin Seed Co., Spokane, Wash., and Dr. Bill Myer of Turf Seeds, Inc., Hubbard, Oregon, conducted a panel relating the seed industry to the sod grower. Jacklin explained the continuing benefits of the "Certified Sod Quality Gold Tag Program" which allows only up to 0.02 percent weeds in seed while the prevailing standard certified quality seed can now contain up to 0.30 percent weeds.

Jacklin explained seed prices have been extremely depressed in the last 16 months, because of the poor economy, low housing starts (which means less house sod), and record seed production which has produced an oversupply of grass seed. He said availability fo fine ryegrasses has further increased the bluegrass problems for his industry. With prices down, he said grass seed growers were quick to react. He said 50 percent less bluegrass acres were harvested last year, and fescues were cut even more, while ryegrasses were down only 20 percent.

Dr. Myer discussed problems of burning fields in the Willamette Valley region of Oregon, where much of the seed production for the United States is done. Burning of the straw in the fields negates the problem of what to do with the straw, and also sanitizes the field for future plantings. But environmentalists and the Oregon legislature want the seed industry to be pollution-free, Myer said. He said smoke management programs using planes to determine good days to burn based on wind patterns have proven somewhat successful thus far. Also, field sanitizers, which burn the straw internally with little smoke have also proven successful, but are much too slow for the scope of burning needed. He said flexibility is needed within the government structure and that the industry can and is confronting the problem now.

Association legal counsel Bill Harding listed areas in which the association helped members during the year with legal problems.

Tom Thornton, Thornton Turf Nursery, Elgin, Ill., organizer of the meeting's educational sessions.



Dr. Henry Indyk, Rutgers University, one of the speakers at the conference.

Dr. Al Turgeon (left), Dr. Bill Myer and Doyle Jacklin, speakers at the American Sod Producers Association winter conference.

A break from the bus tour of Pursley Grass Co. gave conference attendees a chance to relax and sip soft drinks under some Florida foliage.

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KILL ALL BURROWING RODENTS

THE BIG GASSER

New, extra-powerful GIANT DESTROYER gas cartridge. Three times more gas volume, four times more killing power than others. Simply light fuse, drop in pest hole, and cover. Fast action, no harmful residue. USDA approved; guaranteed if used according to directions. Pack of 4, suggested retail price $1.69. See your dealer or order by mail. (Minimum mail order, 2 packs of 4. Add 50¢ postage and handling.)

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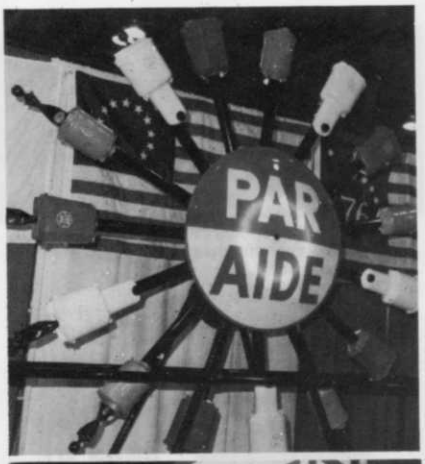
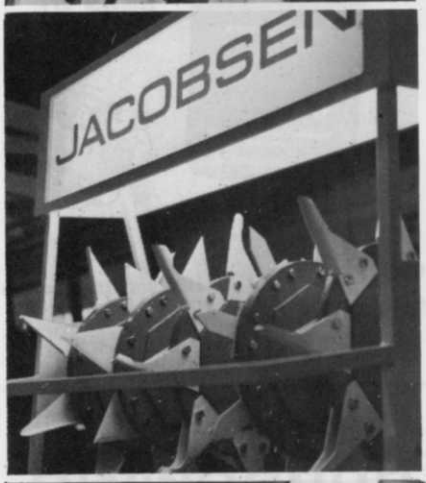
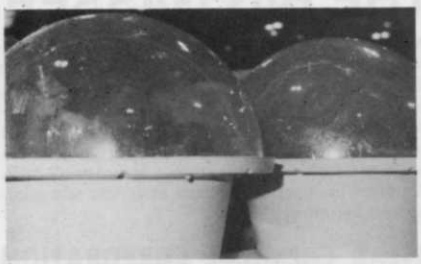
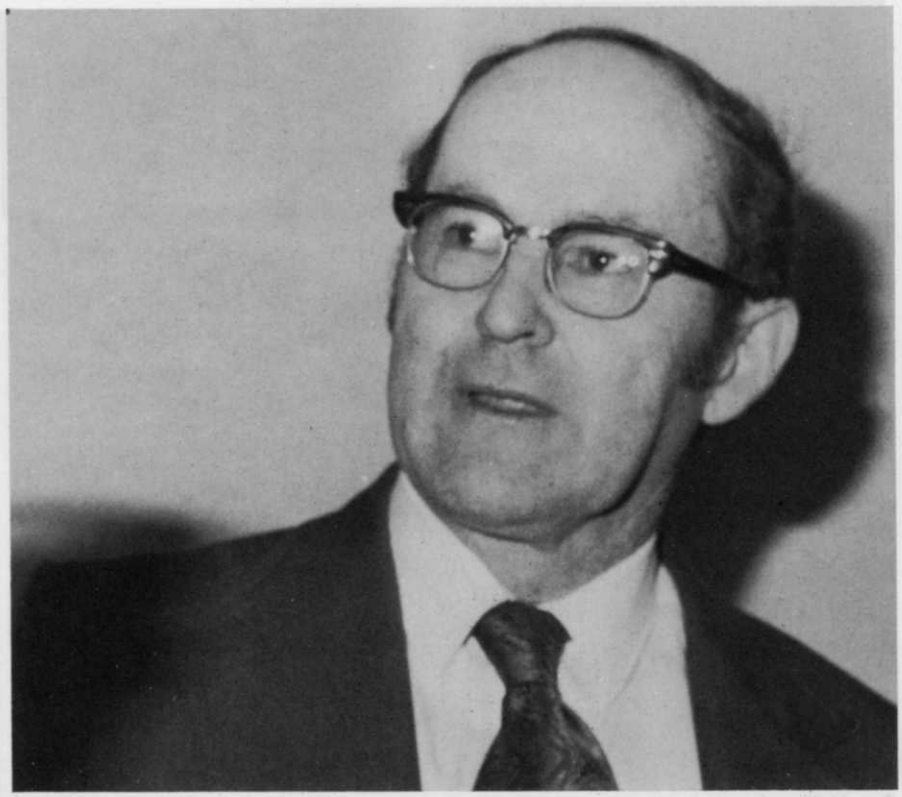




The inside of Toro's maintenance work wagon.



L. R. Nelson Corp.'s irrigation demonstration bubble.



Malpass Chosen President Of GCSAA in Minneapolis

Richard W. Malpass, superintendent at Riverside Golf and Country Club, Portland, Oregon, moved up to become president of the Golf Course Superintendents Association of America at the association's 47th Annual Turfgrass Conference and Show last month in Minneapolis. Malpass, whose home town will host next year's show, succeeded Palmer Maples, Jr., superintendent at The Standard Club, Atlanta.

Final attendance at the show was 3,142, compared to 3,544 the previous year at the show in New Orleans. But this year, about 700 distributors were allowed to attend the show under a special ruling, so comparative figures would have to show the total attendance at 2,442 compared to last year's attendance. Last month's show had 1,039 superintendents in attendance, compared to 1,384 superintendents in 1975 and 1,250 in 1974. It was the least amount of superintendents since 1971. There were 148 exhibits, compared to 150 last year.

At the annual membership meeting, a resolution to raise annual dues to $90 from $65 was passed with little discussion. Also passed was a bylaw providing for a national director to succeed himself. A major resolution that did not pass was one that would have barred local officers from being elected if they were not a member of the national association.

Distinguished service awards were present to Leo J. Feser, Tom Mascaro and Dr. Joseph Duich in opening ceremonies. Bringing the total number of recipients for this award to only 25 for the association's 50-year history, each of the three men were nominated for exemplary activity and contributions to the GCSAA and the profession. Feser's son David accepted the award for his father, who is bedridden in Arizona. George Plimpton, noted author, was keynote speaker at opening ceremonies.

to page 26

Pramitol 25E

Stops weed breakthrough.

Before you lay down asphalt, spray Pramitol® 25E. It'll keep weeds from breaking through your road, airstrip or parking lot pavement.

Not just for one year.

Pramitol controls weeds for about three years.

It works through a slow, naturally continuing process.

Rising ground moisture reaches the underside of the asphalt, forming little drops of water. Dissolving the Pramitol. And carrying it down to be absorbed by the germinating weeds.

Contractors and municipalities are finding that Pramitol has a working place in their 'specs'. In both asphalt and asphalt primer jobs.

If you'd like to know more about how Pramitol stops weeds from breaking through your pavement, drop us a line.

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CIBA–GEIGY

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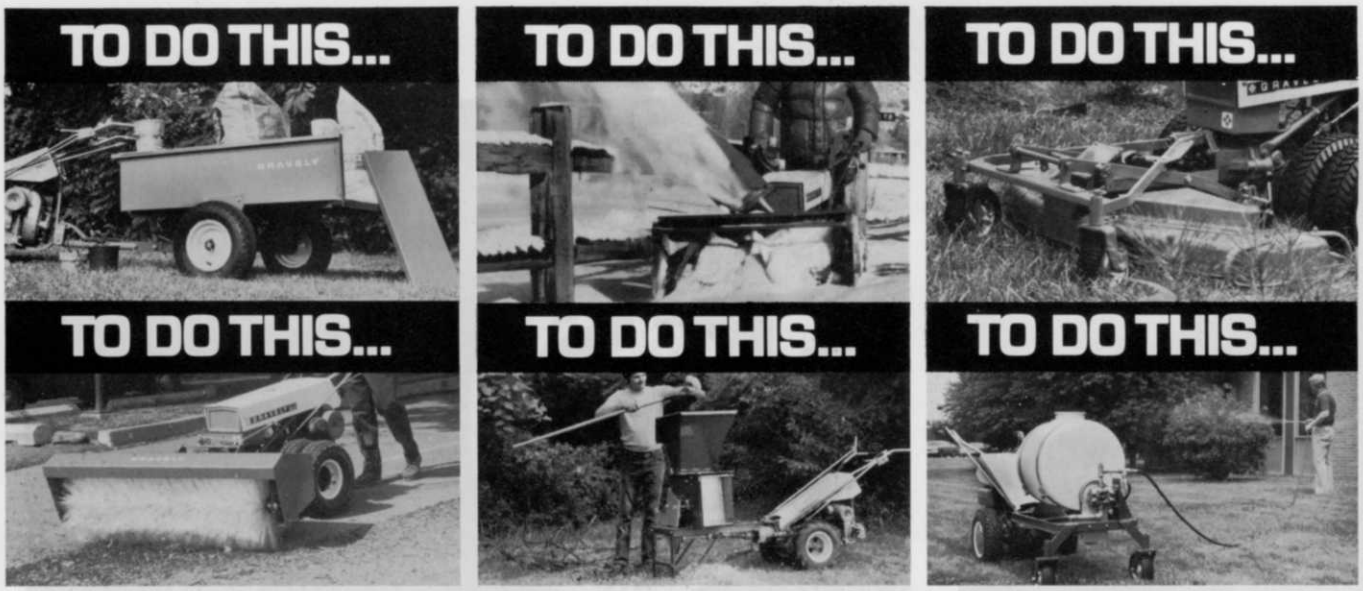
Dr. William Daniel, speaker, Purdue University.

Ed Anderson, Kohler Co.

Dr. Fred Grau and his wife on tour of the exhibit area.

Circle 143 on free information card

Ben Krueger (left) and Lou Haines. Krueger is superintendent at Vail Golf Club, Vail, Colo., President Ford's vacation choice; Haines is superintendent at Denver Country Club, and a national director of the GCSAA.



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Here's the one tractor you need to do almost any grounds maintenance job and do it right . . . the Gravely Convertible tractor. Rugged attachments convert it from a mower that handles both rough areas and smooth lawns to almost a dozen different pieces of equipment.

It'll plow and cultivate gardens and plantings . . . spray shrubbery and trees . . . grind leaves and branches for mulch or compost . . . haul heavy loads . . . do light dozer work and roll snow off drives and sidewalks . . . power-sweep parking lots of dirt or light snow . . . blow snow up to 60 feet away . . . and more. Then, Gravely's steering sulky and dual wheels let you ride behind for the big grounds.

Choose 8, 10 or 12 HP models with Gravely's proven all-gear four-speed transmission, instant reversing action, and key-electric starting. Eight HP manual-start, two or four-speed models also available. Nobody else makes anything else that does so many jobs so well. Look in the Yellow Pages for your nearest dealer or write for our free catalog. Gravely Division of Clarke-Gravely Corporation, 3503 Gravely Lane, Clemmons, North Carolina 27012.

NEW! Economical 12 HP model with manual start and remote heavy-duty air cleaner.

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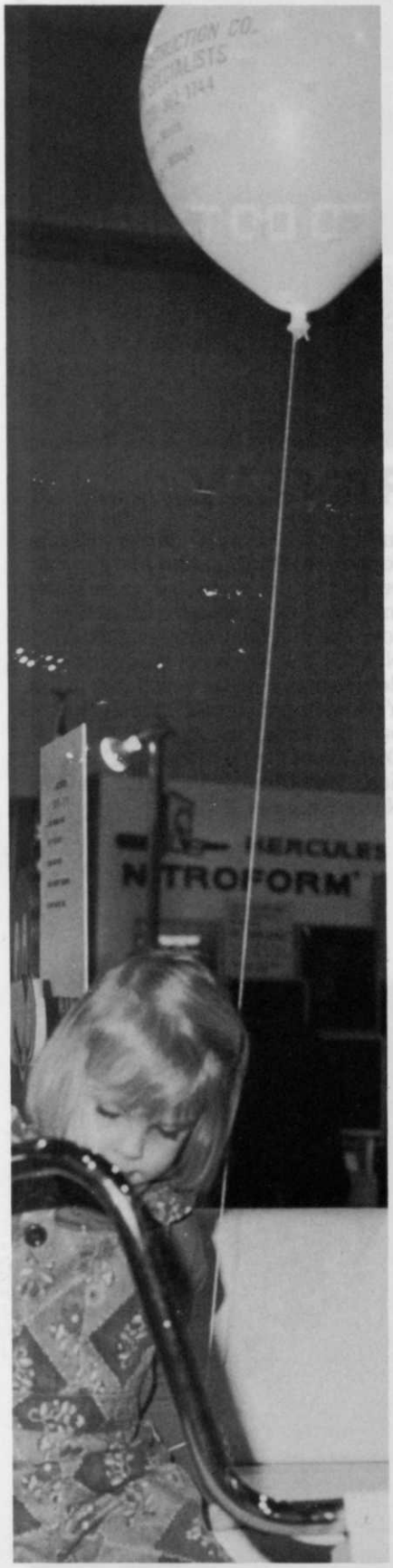


Christine Haske, daughter of Thomas Haske, superintendent at Westwood Country Club, Vienna, Va., sitting on a Jacobsen "Cruiser II".

Noted author George Plimpton, keynote speaker at opening ceremonies in Minneapolis.

Doris Watson, Hercules, Inc., and J. Robert Stiffler, at the Hercules exhibit.

Nitroform® saves! Especially on southern turf.

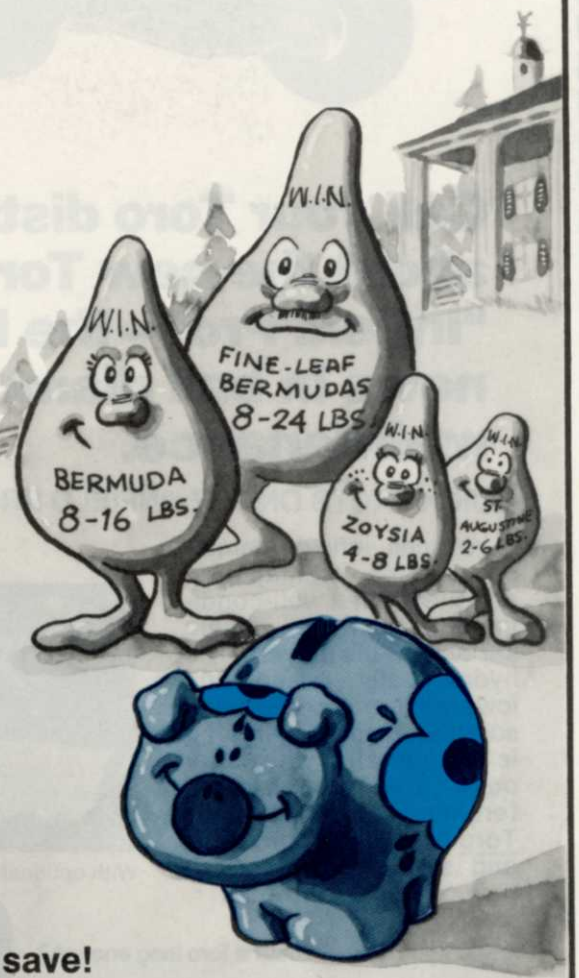
Southern turf is really a pig for nitrogen! The growing season is longer . . . more fertilizer is needed each year. The golfing season is longer . . . steady feeding is needed to keep turf playable. And, when your turf needs so much slow-feeding nitrogen, you need Nitroform® nitrogen.

Nitroform saves on time and labor. It's a slow-release, long-lasting organic, so it feeds for months without repeated application.

Nitroform saves on cost per pound of water insoluble nitrogen (W.I.N.). Nitroform is 38% N . . . with a high percentage of nonburning W.I.N. Compare that to the cost of other nitrogens on a W.I.N. basis.

Nitroform saves you worry, too. It's a slow-release organic, so it doesn't burn or cause excessive growth in warm weather. Easy to apply, inexperienced help can handle it, and it doesn't leach during heavy rains or irrigation.

Odorless and nondusting Nitroform applications do not interfere with play. Order Nitroform as 38-0-0 or a Blue Chip® quality fertilizer mix.



W.I.N. with Nitroform . . . and save!

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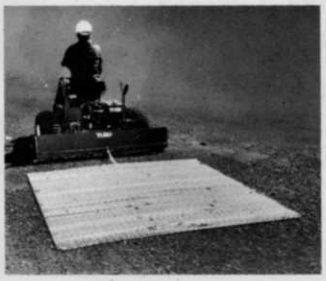
Outgoing GCSAA president Palmer Maples and executive director Conrad Scheetz at the press and speaker's luncheon early in the conference.

Thomas Mascaro, Safe-T-Lawn, Miami, and James Moncrief of the United States Golf Association Green Section. Mascaro received a distinguished service award from the GCSAA.

Call your Toro distributor about the new Toro "Infield Pro"—the biggest news in ball diamond maintenance.

QUICK FACTS ON THE "INFIELD PRO"

It reduces infield maintenance time dramatically, and turns out a well-conditioned "pool table" playing surface for the players. The hydraulically raised and lowered box scraper and scarifier does it. Hydrostatic drive to all 3 wheels for power, traction, low maintenance. It's backed by Toro people, by Toro parts and service, and by our new one year warranty.



With optional 6½' x 6' drag mat

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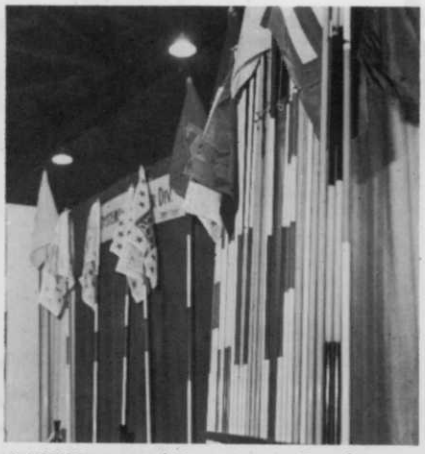
Ben Warren (left) and Maurice Rosener of Warren's Turf Nursery at their exhibit.

It was the last GCSAA show for Mallinckrodt's Stan Frederiksen (right) making a point to customers at his exhibit.



LEWISystems/Container Development exhibit.

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SOMEBODY STAYED UP NIGHTS TO PRODUCE

Adelphi
KENTUCKY BLUEGRASS

RATED OUTSTANDING for overall performance in 10 years of testing at Rutgers University

Adelphi Kentucky Bluegrass is, truly, the product of many sleepless nights. The nature of bluegrass is such that hybridization can be achieved ONLY AT NIGHT and, there's no telling what time of night will be the right time.

So, aside from expertise and dedication, many patient night hours went into mating the parents of Adelphi. The result... ADELPHI KENTUCKY BLUEGRASS (U.S. Plant Patent No. 3150)... was well worth it.

ADELPHI, the first marketed, "Man-Made" Kentucky bluegrass has proven itself... with outstanding overall performance ratings in tests against as many as 60 new varieties... in New Jersey, Ohio, Michigan, Tennessee, Colorado, Rhode Island, Illinois and Washington.

ADELPHI is becoming a favorite of professional turfmen and home gardeners as well. For good looking and natural, richer, darker green color throughout the growing season... excellent density ...good disease resistance and tolerance to moderately close mowing, it's "Man-Made" ADELPHI... A FIRST IN TURF.

ADELPHI has been chosen by the Plant Variety Protection Office, U.S.D.A., as A STANDARD FOR DARK GREEN COLOR to which all bluegrasses applying for plant protection will be compared for color classification.

(Use of this statement does not indicate any approval or recommendation of Adelphi by the U.S.D.A.)

Try it. This grass shouldn't give YOU sleepless nights!

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Other International Inquiries: **Northrup, King & Co., Inc.**, Minneapolis, Minn. 55413

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NEW JERSEY TURF EXPO DRAWS 700 IN SECOND YEAR

The second New Jersey Turf Expo, held recently at Sheraton Poste Inn, Cherry Hill, N.J., attracted a record attendance of more than 700 registrants. The event has combined the traditional well-known New Jersey Turfgrass Conference along with a trade show. It is co-sponsored by the Soils and Crops Department of Cook College of Rutgers University and the New Jersey Turfgrass Association.

The Educational Program organized by Dr. Ralph E. Engel, turfgrass research professor, Cook College — Rutgers University and assisted by Paul Boizelle, superintendent, Fiddler's Elbow Country club, Far Hills, New Jersey, got off to a very enthusiastic start in the first general session with a keynote address by Tom Mascaro of the Safe-T-Lawn Company on the topic of the "Past, Present, and Future of Turfgrass". The following sessions included research reports on calcium arsenate induced Fusarium blight, fungicide studies on rhizoctonia, pythium, and stripe smut, biology and control of a new insect problem — *Ataenius spretulus,* minimum mowing and Kentucky bluegrass fertilization studies. Various panel discussions dealt with such subjects as nematodes, golf course tees, golfers viewpoint of turf, hot weather diseases, athletic fields, sod production and use, and home lawn problems. Other presentations included such topics as golf course construction, insecticide resistance in Japanese beetle grubs, hyperodes, excess water, and turfgrass nurseries. The concluding session on Thursday was devoted to training for state certification as pesticide applicators. In addition, as a part of this training session, the official state test for certification was administered by the New Jersey Department of Environmental Protection to more than 150 of the registrants enrolled in the training session.

Interspersed between the education sessions were periods of opportunity to attend the trade show. A wide range of turfgrass equipment and products were displayed by the participating exhibitors thereby providing the registrants an opportunity to observe and discuss his needs as well as new equipment that is becoming available for better and more efficient turfgrass culture and management.

The banquet program on Wednesday evening attended by more than 450 registrants, featured

1976 Officers and Board of Directors of the New Jersey Turfgrass Association: front row: (left to right) Paul Boizelle, Superintendent, Fiddler's Elbow Country Club, vice president; Bert Jones, vice president, Andrew Wilson Co., president; William Ritchie, Morris County Park Commission, treasurer; Dr. Ralph E. Engel, research professor, turfgrass management, Cook College — Rutgers University, secretary. second row: (left to right) Fred Eden, N. J. Irrigation Co.; Chuck Wilson, Leisure Technology Corp.; Edgar Krause, Fairmount Cemetery Assoc.; Roy Bossolt, Terre Co., past president. third row: (left to right) Dr. Henry W. Indyk, extension specialist in turfgrass management, Cook College — Rutgers University, general chairman, New Jersey Turfgrass Expo; Peter Loft, Loft Seed Co., immediate past president; Jack Wittpenn, Rockland Chemical Co., and Dave Buchholz, Glen Summit Nurseries. Absent when photo was taken, Frank Cacavio.

awards and a guest speaker. Peter Loft of Loft Seed Company, the outgoing president of the New Jersey Turfgrass Association, presented the Kilmer Oak gavel as a symbol of the office to Bert Jones, Andrew Wilson Company, the newly elected president for 1976. President Jones, also acting as emcee presented Loft with a plaque in behalf of the association in appreciation for his services to the organization.

Highlighting the awards was the presentation of a $500 scholarship designated as the New Jersey Turfgrass Hall of Fame James Smith, Sr. Scholarship and the New Jersey Turfgrass Hall of Fame Award for 1975. The scholarship was presented by Mr. James Smith, Sr. (developer of Fertl-Soil topdressing mixture) to Steve Cosky, who is a senior student at Cook College — Rutgers University, majoring in turfgrass management. Steve plans to pursue his turfgrass interests in graduate school. Mr. Smith, as the recipient of the first New Jersey Turfgrass Hall of Fame Award initiated in 1974, was given the honor of making the scholarship presentation. At the age of 87, Mr. Smith is still very active serving as president of a bank.

The New Jersey Turfgrass Hall of Fame Award for 1975 was presented to Dr. Howard B. Sprague in appreciation and recognition of his many contributions for the advancement of turf during his long, devoted, and illustrious career in agriculture. The award was presented by Mr. Roy Bossolt of Terre Company, who is a past president of the New Jersey Turfgrass Association. In his so-called retirement, Dr. Sprague continues to be very active serving international agriculture as an agricultural consultant.

The banquet activities were concluded with a presentation by the guest spreaker, Fred McClure. McClure, a junior student majoring in ag economics at Texas A & M University, captivated the audience with his presentation entitled "America's Plan For The Future". Commenting on McClure's banquet address, Dr. Henry W. Indyk, who served as general chairman of New Jersey Turfgrass Expo, stated that the general theme of his presentation, "getting it all together", very appropriately described what New Jersey Turfgrass Expo hopes to achieve. The turfgrass industry consists of various facets with different but also at the same time common interests. All too often, turfgrass conferences are strongly oriented toward a specific interest group. A major objective of New Jersey Turfgrass Expo is to improve and advance the turfgrass industry by providing an opportunity for all facets of the industry to meet together, not only to discuss mutual problems and concerns, but also to become increasingly aware of problems specific for a particular facet of the industry. □

Dr. Ralph E. Engel, research professor in turfgrass management at Cook College Rutgers University, who was chairman of the educational sessions at the New Jersey Turf Expo held recently.

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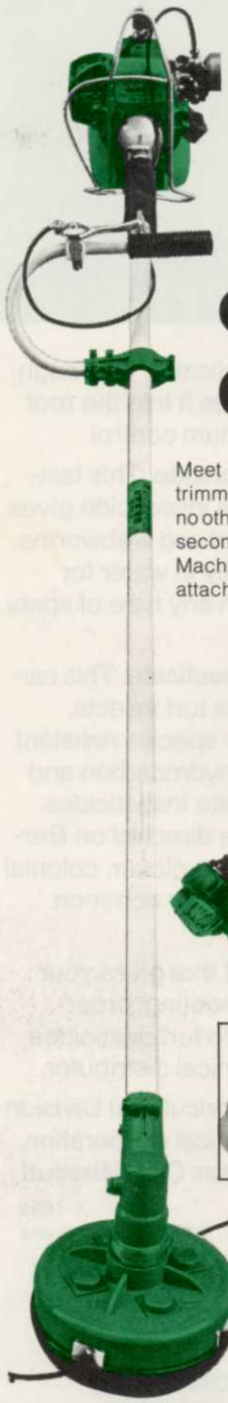
People on the Move

Ivan L. Vagts is national service supervisor for **Cushman-Ryan** turf care equipment, Lincoln, Neb. . . . Ken W. Gangwer is general manager of marketing for **Davis Mfg.,** Wichita, Kan., a division of J I Case . . . Robert Martin is sales manager for **F.D. Kees Mfg. Co.,** Beatrice, Neb. . . . William L. Hopkins is manager, worldwide marketing planning for agricultural chemicals, **Elanco Products Co.,** Indianapolis, Ind. . . . Paul Miller, superintendent at Greenview Country Club, Centralia, Ill., is president of **Tri-State Golf Course Superintendents Association** . . . David Fairbank, superintendent at Army Navy Country Club, Arlington, Va., is president of the **Mid-Atlantic Golf Course Superintendents Association** . . . Charles (Jack) Small, superintendent at Adenakee Country Club, Biddeford, Maine, is president of the **Maine Golf Course Superintendents Association** . . . J. Milton Abell is superintendent at **Canterbury Club,** Marietta, Ga. . . . Sandra Hochhausen is promotional/sales representative for **Grass Growers, Inc.,** Plainfield N.J. . . . Fred Opperman, superintendent at Glen Oak Country Club, Glen Ellyn, Ill., is president of the **Midwest Association of Golf Course Superintendents** . . . Dan Gieseler is superintendent at **Mission Valley Jo** golf complex in San Juan Capistrano,

Vagts

Gangwer

Calif. . . . Bill Anderson has been promoted to superintendent at **Carmel Country Club,** Charlotte, N.C. . . . Gary Panter is superintendent at **Leawood South Country Club,** Leawood, Kan. . . . David Pewitt is superintendent at **Bigby Hollow Country Club,** Columbia, Tenn. . . . James Callaghan is superintendent at **Creekwood Country Club,** Athens, Ga. . . . Wendell Boken is superintendent at **Atlantic County Club,** Iowa . . . Merrill Frank, superintendent at Brookside Golf and Country Club, Worthington, Ohio is president of the **Central Ohio Golf Course Superintendents Association** . . . Billy G. Chambers is superintendent at **Furman University Golf Course** . . . Dean Sime is president of the **Minnesota Golf Course Superintendents Association** . . . George L. Arends is an agricultural sales representative for **Thompson-Hayward Chemical Co.,** Kansas City, Kan. He will cover the western half of lower Michigan . . . Mark B. Windels is a field research and development representative for **Thompson-Hayward Chemical Co.** He will be headquartered in Fridley, Minn. . . . Stoney Wilson is general manager of the **J I Case Co.**



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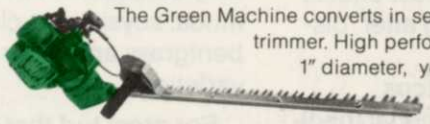

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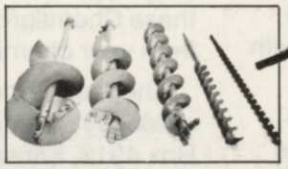

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Martin

Hopkins

New York State Nurserymen's Association . . . Robert Taylor, Concord Nurseries, North Collins, N.Y., is president of the **Wholesale Nursery Growers of America** . . . Tom Kellenberger and Mark Meier are sales representatives for **Cole Nursery,** Circleville, Ohio . . . A. J. Powell, Jr., is associate professor and extension turf specialist on the faculty at the **University of Kentucky,** Lexington . . . Jeff Balsey is a field sales representative serving seven counties of north central Indiana for Agricultural Division of **Ciba-Geigy Corp.,** Greensboro, N.C. . . . Solomon Whitfield is a field sales representative for 17 counties in southwest Michigan for the Agricultural Division of **Ciba-Geigy Corp.,** Greensboro, N.C. . . . Allen Anderson is superintendent at **El Toro Marine Base Golf Course,** California . . . C. M. "Butch" Alexander is superintendent at **Honey Creek Golf and Country Club,** Conyers, Ga. . . . Lloyd McKenzie is superintendent at **Augusta National Golf Club,** Georgia . . . David Green is superintendent at **Belle Meade Country Club,** Nashville, Tenn. . . . Rodney King is superintendent at **Bowden Golf Club,** Macon, Ga. . . . Don Burns is superintendent at **Biltmore Forest Country Club,** South Carolina . . . Several new plant science representatives have been named for **Eli Lilly Co.** L. B. Lynn will cover Indiana, Kentucky, Michigan and Ohio; W. R. McGregor will cover western Canada; D. E. Robinson will cover the north central region and will be based in Omaha, Neb.; L. G. Peterson has transferred from the company's California research station to be regional research representative for the western region . . . Chuck Roark is regional salesman for southern California for **Pen-Gro**

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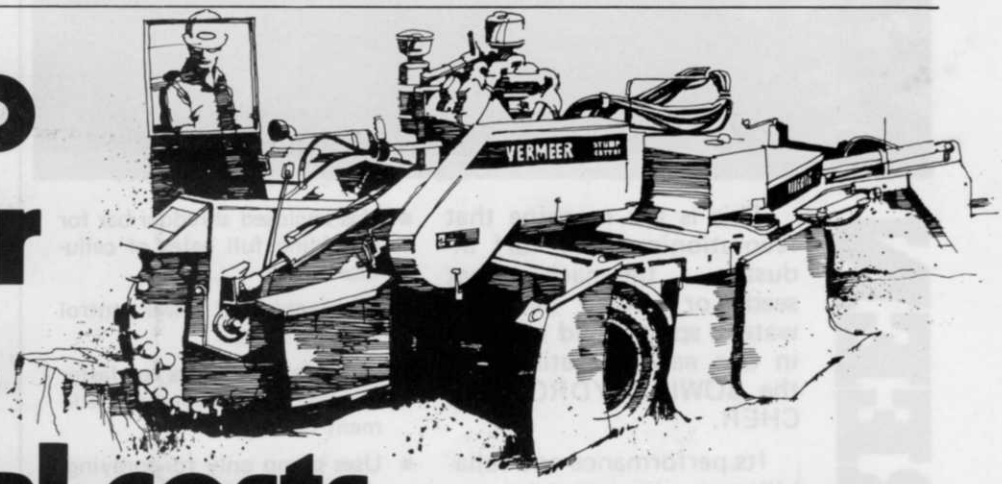

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Corp., South San Francisco, Calif. . . . Ben Brown, Brown's Nursery, Rockwell, N.C., is president of **North Carolina Association of Nurserymen** . . . Ralph B. Shugert, Jr., is superintendent at **Cole Nursery,** Circleville, Ohio . . . James E. Jackson is superintendent at **Green Hills Country Club,** Athens, Ga. . . . Jim Ashley is superintendent at **Highland Falls Country Club,** North Carolina . . . Robert G. Duncan is manager of field development for the southern region for **Velsicol Chemical Corp.,** Chicago . . . Myrlen Kelly is manager of environmental affairs for **Valley Nitrogen Producers, Inc.,** Fresno, Calif. . . . Joe Sommers, Sommers Landscaping, Inc., Stevens Point, Wis., is president of the **Wisconsin Landscape Contractors Association.**

Alvin Jordan is superintendent at **Pine Ridge Country Club,** Lawrenceville, Ga. . . . Gary A. Lee has resigned his position as associate professor in weed science at the **University of Wyoming,** and now is serving as professor of agronomy at the **University of Idaho,** Moscow . . . Larry Sloop is sales manager of major accounts for **Davis Mfg.** Div. of J.I. Case . . . Marcus Alley is field research representative in Ohio and Kentucky for the Agricultural Div. of **Ciba-Geigy Corp.,** Greensboro, N.C. . . . E.T. Carlson is director of research and development for **Freeport Minerals Co.,** New York . . . Ronald P. Saunders is an agricultural sales representative for **Thompson-Hayward Chemical Co.,** Kansas City, Kan. He is responsible for the sale of the company's complete line of agricultural chemicals, working in the Norfolk, Va. area. . . . Earl L.Striplin Jr. is national marketing manager, pesticides, Ortho Div., **Chevron Chemical Co.,** San Francisco, Calif. He succeeds M. E. Wierenga, who has retired . . . William H. Hyslop is sales manager for the northern Ohio district, Simplicity Mfg. Co., **Allis-Chalmers Corp.,** Milwaukee . . . Robert M. Budecki is national accounts manager for Simplicity Mfg. Co., **Allis-Chalmers Corp.,** Milwaukee . . . Librarian George McCarthy has transferred to technical information services manager for the Agricultural Div. of **Ciba-Geigy Corp.,** Greensboro, N.C. . . . Dr. Ivan J. Thomason, Riverside, has been named assistant director of the cooperative extension service at the **University of California** . . . James "Bubba" Luke is superintendent at **John Island Golf Club,** Vero Beach, Fla. . . . Ted Sekers is superintendent at **Fairington Golf and Tennis Club,** Liothonia, Ga. . . . A. A. Thompson is superintendent at **Hidden Hills County Club,** Stone Mountain, Ga. . . . Thomas T. Bauman has joined the department of botany and plant pathlogy at **Purdue University** . . . William H. Boger is marketing manager for **Micro-Por, Inc.,** Colwich, Kan., manufacturer of patented microporous plastic pipe and tubing for aeration, filtration, osmotic and irrigation projects in commercial, municipal, agricultural and consumer applications. He is a former president of the Ground Water Institute . . . Narayanaswami Venkateswaran is senior synthesis chemist for the Agricultural Div. of **Ciba-Geigy Corp.,** Greensboro, N.C. Dan McIntyre has been promoted to production planning director for the same company.

This is the machine that revolutionized the turf industry . . . the machine that seeds or sprigs, fertilizes, waters, sprays, and mulches in one easy operation . . . the BOWIE HYDRO-MULCHER.

Its performance and reliability are unequaled. Its capabilities have created a whole new industry of lawn and turf, ground cover and erosion specialists. The BOWIE HYDRO-MULCHER is the daddy of them all . . . the green machine!

EXCLUSIVE BOWIE HYDRO-MULCHER FEATURES:

- Only proven unit for both sprigging and seeding with cellulose fiber mulches.
- Can mulch, fertilize and seed or sprig half an acre in eight minutes.
- Has enclosed shredder bar for shredding full bales of cellulose fibers.
- Has centralized tower control with no hoses.
- Has triple agitators for faster mixing and eliminating sediment build-up.
- Uses pump only for spraying, so pump lasts longer.
- Has spray mist and other accessory nozzles for such uses as insect control, tree spraying and fire fighting.
- Six models — from 350 to 3,000 gallon capacity.

CALL OR WRITE FOR COMPLETE DETAILS:

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JOHN DEERE MAKES TRACTORS FOR JOBS OF ALL SIZES. BECAUSE YOU CAN MAKE MONEY ON JOBS OF ALL SIZES.

There's no such thing as a tractor that's right for any size job. If it's big enough for golf course maintenance, it's probably too big for most residential work.

That's why John Deere Tractors come in a wide range of sizes. So you can have John Deere performance and dependability going for you on any job.

Take the new John Deere 2040. It has a 40*-hp diesel engine, 8-speed constant-mesh transmission, and plenty of hydraulic power to handle any attachment you might need. Including a 6-foot, center-mounted rotary mower. The 2040 was designed to do the big jobs faster and easier.

For work that doesn't require a tractor as big as the 2040, there's the hydrostatic-drive John Deere 400. It's powered by a twin-cylinder, 19.9-hp engine. And there's a 5-foot, center-mounted rotary mower that's designed to match the 400.

To do small jobs economically and efficiently, John Deere offers you the 200 Series lawn and garden tractors. You can choose from 8-, 10-, 12-, and 14-hp models, all with variable-speed drive to change ground speed without stopping or shifting gears. Rotary mowers are available in either 38- or 46-inch widths.

With any size John Deere Tractor, you also get the John Deere tradition of expert service, parts availability and flexible financing.

For any job that comes along —big, small or in-between—John Deere has a way to do it. Profitably.

**Maximum PTO horsepower measured at 2,500 engine rpm (factory observed).*

NOTHING RUNS LIKE A DEERE®

JOHN DEERE

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Brush Control Agent Stops Undesirable Woody Plants

City arborist Keith Jones has launched a new brush control program in Portland, Maine.

A new concept for control of undesirable woody plants is a brush control agent which has been labeled for non-crop application on railroad, pipeline, utility and highway rights-of-way, drainage ditchbanks, in storage areas and on industrial sites.

Instead of a quick, massive kill obtained with familiar industrial brush control compounds, the agent controls bud break, suppresses growth and delays the extension of woody plant terminals. The compound is applied as a foliar spray in late summer or early fall, after the main flush of annual growth has hardened. On most species of deciduous brush, it produces only a slight visible effect on the foliage. Normal leaf drop occurs in the fall, but leaf bud development the following spring is either severely limited with miniature, abnormal leaves showing — or bud development is prevented entirely and the plant subsequently dies.

The mode of action of the agent has not been fully ascertained, but the compound seems to be absorbed by stems and foliage; and this affects bud development. Deciduous woody species appear to continue their normal life processes following application and defoliate at the end of the growing season, so there is a normal delay till the next spring before a full reading can be made of the results of the treatment. Pines, however, show immediate discoloration; most are susceptible.

This new brush control agent is being recommended for use in areas with susceptible species of woody plants and especially in environmentally sensitive areas where little or no brown-out is desirable. It also looks like a promising compound where volatility or drift of other herbicides can be a problem or where low toxicity and no soil residue are desired. In addition, it offers special interest as a compound for brush control on land adjacent to domestic water reservoirs, streams, lakes and ponds.

There is another interesting concept. Side trimming of woody growth that may be encroaching on a right-of-way has been a feature of this new material that has aroused the interest of many maintenance men. Applications made to encroaching foliage and stems of adjacent trees have usually resulted in only the control of this undesirable growth.

It is active on more than three dozen species of woody plants. The initial label indicated control can be obtained on the following: hawthorn, red oak, white oak, water oak, sweet gum, wild blackberry, alder, ash, cherry, elm, black gum, sassafrass, and willow. Development work is continuing on a number of other species, and it is expected that the label will be extended as tests are completed.

A number of species such as balsam poplar, rhododendron, box elder, honeysuckle, mountain laurel, and Kudzu and others are not controlled however. Most herbaceous species are not affected. Hence, undesirable woody plants may be controlled, without eliminating a desirable green cover from a treated area.

The new compound is a water soluble liquid that is nonvolatile and nonflammable. It is readily absorbed by soil particles and is decomposed quickly by soil microorganisms, with a half-life of a few weeks, depending on soil, moisture and other conditions. It has been widely tested prior to EPA registration and in 1975 it was applied commercially in an introductory program.

It has been used in conventional ground and air application equipment at rates of six to 12 pounds per acre (1½ to 3 gallons) in 50 to 300 gallons of water per acre. A surfactant has been used at the rate of one quart per 100 gallons of water. Applicators have been trained to obtain complete coverage of foliage and stems with the spray without run-off.

to page 72

Problem brush in a Portland recreation area was treated in September.

Brush treatments were made by a Portland Forestry Division crew, using a spray gun and hose from a truck-mounted tank.

Regrowth problem in a Portland "mini-park" represents an area treated in a 1975 program. In the spring this regrowth will have been stopped.

Washed-off sprays are dollars "down the drain"

New SPRAY STAY® sticker prevents costly wash-off...for less than ½¢ per gallon of spray

Now, your spray applications can be weatherproofed to save you time, labor and materials. Just add 1 part of SPRAY STAY to 800 parts spray. Mixes easily and stays mixed.

SPRAY STAY makes your sprays last. It shields from rains, irrigations, winds, snows, ultra-violet radiation and abrasions.

100% organic. Meets U.S. Federal specifications for use on edible crops. Compatible with all horticultural and agricultural sprays we have tested. Will not clog nozzles. Is not damaged by freezing.

SPRAY STAY is another quality product from the makers of WILT PRUF.® Add SPRAY STAY next time and every time you spray. . . eliminate the ever-present risks of costly failure!

Available in 1 pint, 1 gallon and 5 gallon sizes. (U.S. measure).
Ask your distributor or:

NURSERY SPECIALTY PRODUCTS Division of J. A. Hartman Corp.
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Circle 120 on free information card

Meeting Dates

Midwest Turf Conference, Purdue University, W. Lafayette, Ind., March 1-3.

Professional Turf and Plant Conference, Salisbury Club, Eisenhower Park, East Meadow, L.I., N.Y., March 2.

Northeast Agricultural Aviation Association, Holiday Inn, Ithaca, N.Y., March 2-4.

Professional Turf and Landscape Conference, Ramada Inn, North Haven, Conn., March 3.

Golf Course Superintendents Association of America seminar on "Principles of Fertilizer Usage", Austin, Texas, March 3-4.

Western Canada Turfgrass Association Annual Conference, Vancouver, March 3-5.

University of Massachusetts Fine Turf Conference, Treadway Inn, Chicopee, Mass., March 3-5.

Ontario Shade Tree Council Annual Conference, Oshawa, Ontario, March 4-5.

Wisconsin Landscape Federation Convention, Scotsland Resort, Oconomowoc, Wis., March 7-8.

Southern Turfgrass Conference and Show, Cook Convention Center, Memphis, Tenn., March 7-9.

Canadian Golf Superintendents Association 27th Annual Turfgrass Show, Inn-on-the-Park, Toronto, Ontario, March 8-10.

Iowa Golf Course Superintendents Association Annual Conference, Iowa State University, Ames, March 8-10.

Northeastern Forest Pest Council Winter Meeting, Copley Plaza Hotel, Boston, March 10-11.

Pennsylvania Parks and Recreation Society 29th Annual Meeting, Seven Springs Mountain Resort, Champion, Pa., March 14-17.

Golf Course Superintendents Association of America seminar on "Leadership, Motivation and Employe Relations", King of Prussia, Pa. March 17-18.

Rocky Mountain Golf Course Superintendents Association Meeting, Indian Tree Golf Club, Colorado, March 18.

American Society of Golf Course Architects 30th Annual Meeting, Del Monte Lodge, Monterey, Calif., March 21-26.

Maine Turf Conference, Red Coach Grill, Portland, March 23-24.

Golf Course Superintendents Association of America seminar on "Principles of Landscape",Portland, Oregon, April 6-7.

Arizona Turfgrass Council Second Annual Turfgrass Materials and Equipment Show, Veteran's Memorial Coliseum, Phoenix, April 14.

Rocky Mountain Golf Course Superintendents Association Meeting, Fox Hills Country Club, Longmont, Colo., April 15.

Southern California Turf and Landscape Institute, Royal Inn, Anaheim, Calif., April 28-29.

Tennessee Golf Course Superintendents Association Meeting, Rockwood Country Club, May 3.

Arizona Turfgrass Conference, Doubletree Inn, Tucson, Ariz., May 5-6.

Georgia Golf Course Superintendents Association Educational Program and Business Meeting, Atlanta Athletic Club, Duluth, May 11-12.

Rocky Mountain Golf Course Superintendents Association, Inverness Golf Course, Englewood, Colo., May 20.

International Shade Tree Conference Western Chapter Meeting, Hyatt Regency Hotel, San Jose, Calif., May 23-26.

Golf Course Builders Association Meeting, Fresno, Calif., June 25.

Aquatic Plant Management Society, Annual Meeting, Pier 66, Fort Lauderdale, Fla., July 11-14.

Tennessee Golf Course Superintendents Association Meeting, Crockett Springs National Golf Course, Brentwood, August 2.

International Society of Arboriculture Annual Meeting, Stauffer's Riverfront Towers, St. Louis, Mo., August 8-12.

Georgia Golf Course Superintendents Association Educational Program and Business Meeting, Northwood Golf and Country Club, Lawrenceville, August 9-10.

Symposium on Reclamation of Drastically Disturbed Lands, Ohio Agricultural Research and Development Center, Wooster, Ohio, August 9-12.

Plant Growth Regulator Working Group, Baton Rouge, La., August 11-14.

International Symposium on Biological Control of Weeds, University of Florida, Gainsville, August 30-Sept. 2.

Fourth Arkansas Turfgrass Field Day and Conference, Country Club of Little Rock, Sept. 14-15.

Northern California Turfgrass Council Turf and Landscape Irrigation Seminar, Asilomar Conference Grounds, Pacific Grove, Calif., Oct. 1-3.

Southern California Turfgrass Council 16th Annual Turfgrass Equipment and Materials Educational Exposition, Orange County Fairgrounds, Costa Mesa, Calif., Oct. 20-21.

Rocky Mountain Golf Course Superintendents Association Meeting, Willis Case Golf Course, Colorado, Oct. 21.

Central Plains Turfgrass Conference, K-State Union, Manhattan, Kansas, Oct. 21-22.

Weed Science Society Annual Meeting, Stouffer's Riverfront Towers, St. Louis, Mo., Feb. 8-10, 1977.

How to make your board see the value of new turf equipment.

Convincing your Board of Directors that new turf equipment is a neccessary and sound investment can be one of your most difficult tasks. They don't always see the benefits behind such a purchase.

And as good businessmen, they won't commit the money until they're sold on the expenditure. So when it comes time to face them, here are some of the things you should point out.

Point #1: The Duffer Demands More.

Today's golfer is more sophisticated than ever before. He has seen, and many times played, some of the finest courses in the world. He recognizes the value of a good course. And if yours is sub-par, he'll go elsewhere.

With this more sophisticated golfer comes the need for more sophisticated golf course maintenance. Heavy player traffic has increased the work required to keep the turf in top condition. So jobs that were once optional are now mandatory. Where spiking a green used to be sufficient, today it also needs deep aeration.

All this dictates the use of specialized equipment that wasn't available ten or even five years ago. Equipment that will enable you to build and maintain a top flight course, and help avoid special turf problems that could prove extremely costly.

Point #2: Machines Do More.

In the past decade, the price of labor has tripled. The same number of men must do more work in less time to give you the same value for each labor dollar invested. Mechanized equipment allows you to trim hundreds of unnecessary man-hours. One man can now cut more sod in an hour than six men used to cut in six hours. Or that same man can aerate 18 greens in a few hours instead of a few days.

New engineering concepts coupled with precision machinery means he'll do a consistently good job. You get better results and fewer occasions when a job must be redone.

And your turf equipment is depreciable; something your labor is not. You get an accounting break over a period of years. At the end, it's like owning a piece of free machinery. One that will continue to save you money long after you've paid for it.

Which brings us to the third point.

Point #3: Longevity Makes Them Worth More.

Equipment life should be a prime consideration when you select a manufacturer. The longer a machine works, the more it does, and the less maintenance it requires, the better your investment. And here's where we'd like to put in a little plug for Cushman and Ryan turf equipment.

Both lines of machinery are built to last . . . and last. It's not unusual to see a piece of Cushman or Ryan equipment still doing it's daily chores after ten or fifteen years of use. We believe the idea of "planned obsolescence" should be obsolete.

But performance is just as important as longevity. A Cushman Turf-Truckster and its accessories give you the capabilities to transport, spray, spike, dump, aerate, and top dress . . . all from *one* power source.

Ryan offers a machine for almost every turf task. Equipment that does a better job, in less time, and with a minimum of maintenance. For over 30 years, all Ryan equipment has been built with three goals in mind: quality, performance, and innovation.

If "A Day With the Board" is in your future, we'd like the opportunity to tell you more about the full line of Cushman and Ryan Turf equipment. Write to us and we'll send you our catalogs, full of detailed product information. Information that may help you open a few eyes to the value of new turf equipment.

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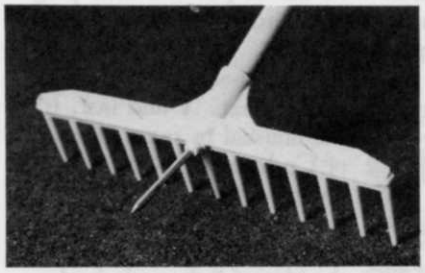
P. O. Box 82409,
Lincoln, NB 68501

Circle 105 on free information card

New Products

New yellow sand trap rake from Lesco Products combines visibility and safety. Stands out for the convenience of the golfer. Can also be ordered in black. Made of poly material for flex in tines and utilizes aircraft-type triangular ribbing for strength and lack of flex in rake head. Spike is molded into rake head rather than into handle. Solid handles with no hole in base resist wicking action of water which leads to rotting. Rake is standard 14 inches with 2¾ inch tines.



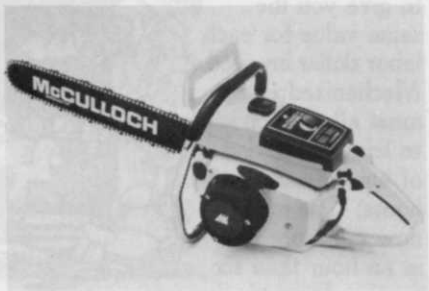
Circle 701 on free information card.

Princeton Manufacturing Co. introduces the E-2 transplanter, designed to operate in tilled soil, greatly reduce labor of transplanting trees and smaller plants and provide controlled spacing and straighter rows for easy cultivation. Using any two-plow tractor with a three-point hitch, the unit can transplant 600-800 six- to eight-foot trees or 1,400 three- to four-foot trees an hour with a driver and one planter, and up to 1,500 two- to three-foot trees or smaller plants an hour with a driver and two planters, the manufacturer said.

Circle 702 on free information card.

Toro Company's Irrigation Division reports its 1976 product catalog is ready for distribution. The 54-page book with four-color cover gives complete information on features, specifications and performace of the company's full line of irrigation equipment for either hydraulic or electric systems. The line includes 43 models of automatic controllers, 18 different automatic valves and sprinklers ranging in size from bubblers and shrubs sprays to a 60 series rotary sprinkler capable of discharging 82 gallons of water a minute over a 225-foot-diameter circle. Other product categories covered are: impact sprinklers and quick-coupling equipment, backflow preventers and installation tools and accessories. Details of the company's limited one-year warranty and seven-year extended parts coverage are also included.

Circle 703 on free information card.



A chain saw designed to appeal to all professional woodcutters and industrial users, the Super Pro 70, has been introduced by McCulloch Corp. The unit offers a chain brake which reduces hazard from kickback. It is powered by a 4.3 cubic engine, weights 15¾ pounds (power unit only) and the operator is insulated from vibration by McCulloch's patented system.

Circle 704 on free information card.

A cap cutter for opening chemical cans is available from Brandt Enterprises. It is designed to open a five-gallon drum of chemical as it cuts a circular opening in the plastic spout. The manufacturer said it saves prying, slicing, jabbing, spillage and loss of time. There is a money-back guarantee.

Circle 705 on free information card.

A technical bulletin describing Imidan insecticide and its uses on deciduous shade and ornamental trees is available from Stauffer Chemical Co. The bulletin details product information on chemical structure, physical properties, toxicology and soil stability. Also explained are studies on the insecticide's environmental safety dealing with fish and wildlife, residues and reproduction.

Circle 706 on free information card.

A four-wheel drive trencher designed to fill the gap between small two-wheel trenchers and the larger sophisticated rubber-tired trenchers, the Fleetline 14-4, has been introduced by Davis Manufacturing, Division of J I Case. The 14 horsepower trencher is equipped with a Kohler air-cooled electric start engine. It trenches from four inches wide, 45 inches deep to 12 inches wide, 26 inches deep at infinitely variable digging speeds to match varying soil conditions. It has a transport speed of 2.1 miles per hour.

Circle 707 on free information card.

A chain saw powered by a 12-volt battery in a vehicle or carried by the user is being manufactured and marketed by Tensen Co., Inc. Known as the Minibrute, the 10¼ pound saw is equipped with a 10-inch Oregon chain and bar. Its 1.2 horsepower motor turns the chains 2,500 feet per minute. Its overall dimensions are 22 inches x 12 inches x six inches. The chain is oiled automatically every time the saw is turned on; it also has a manual pump for pre-cutting lubrication. The oil chamber holds six ounces and has a clear, plastic sighting tube.

Circle 708 on free information card.

Let's talk about bad service.

Let's say you've gone to all the trouble of carefully selecting the turf care equipment you've been looking for.

You've worked hard to find it, and get it at the best price you can, and delivered as quickly as possible.

Only to start using it and then discover you can't get good service on it. It's like you went to all that trouble for nothing.

We know you don't like bad service. And we don't either. That's why every Jacobsen distributor goes out of his way to be second to nobody in service.

The reason is really simple. We're independent businessmen whose success or failure depends upon our reputation. So we jealously guard it.

We do this by offering you the finest and most complete line of turf care equipment we can find. It's made by Jacobsen. Whatever you need, we probably have it.

Then we back it up with service matched by none. We have parts in stock. Our mechanics are Jacobsen-trained to know the equipment inside and out. And we can help you train your people in equipment maintenance through Jacobsen's school, or field training program.

Besides that, we can probably help you arrange a financing or leasing program to suit your needs.

And we can probably help you do a cost analysis of your turf care chores to determine which equipment will do the fastest job at least cost.

So the next time you need turf care equipment, talk to your Jacobsen distributor. He has the right product. If you want good service, he has that, too.

And that's not bad.

Not bad at all.

Your Jacobsen Distributors

Great products deserve great service.

For the name of the distributor near you write: Jacobsen Turf Distributor Directory, 1721 Packard Avenue, Racine, Wisconsin 53403

Circle 126 on free information card

BILLY GOAT

Chippit®

OUR TWO-MOUTHED GOAT CAN CHEW UP JUST ABOUT ANYTHING . . . EVEN A 3″ TREE LIMB. Solve all your yard-debris problems with one 8 h.p. machine. Limbs and brush fed into its rear hopper are sliced into chips and neatly bagged. Leaves and vines placed in the other hopper are shredded into useful mulch or compost material.

For Further Information Contact
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P.O. Box 308, Lee's Summit, Mo. 64063

Name_____
Address_____
City_____
State_____ Zip_____

For More Details Circle (106) on Reply Card

A parts washer from Weil Service Products Corp. is a completely self-contained parts cleaners and degreaser. Parts to be cleaned are placed on a recessed screen on top of the unit, where they are pressure-washed by a variable blast of clean solvent. The dirty solvent then drains into the pedestal of the unit, where it is micron-filtered to a user-selected fineness of five to 100 microns unitl it is clean. Expensive solvent is continuously recycled, renewed and conserved to be used again. The unit operates effectively with from six to 15 gallons of solvent.

Circle 709 on free information card.

A pressure washer for small jobs in introduced by White Outdoor Products. It delivers 1.8 gallons of water per minute at 500 pounds per square inch nozzle pressure. The unit automatically mixes detergent or other cleaning chemicals with outside water supply for cleaning.

Circle 710 on free information card.

Protective footwear, injection-molded of PVC and polyurethane for traction, abrasion-resistance and protection against acids, chemicals and oils, has been introduced by Goodall Rubber Co. The "Poly-Sole" boot is available in sizes 6 to 13 with a steel safety toe that meets ANSI specifications. The molding process eliminates seams as a source of leaks. The upper is light, has low-temperature flexibility for maximum mobility and comfort and resists chemicals. A pants-gripper at the top of the boot holds trousers snugly inside.

Circle 711 on free information card.

National Drain Supplies, Inc., has broadened its 1976 line of pipe, fittings and drainage/sprinkler system specialities to include six new items.

Circle 712 on free information card.

W.I.N. with NITROFORM® and save!

W.I.N. with Nitroform® nitrogen . . . and save! In lower cost per pound of W.I.N.

Mission bags it!

HERCULES INCORPORATED
Turf and Horticultural Products
Wilmington, Delaware 19899
STH76-22

Circle 144 on free information card

THE UNDERCOVER WEED KILLER.

Weeds and roots under asphalt paving can cause tremendous damage. But you won't know they're doing it until it's already done. That's why you need CASORON, the Undercover Weed Killer.

CASORON is approved for use under asphalt, whether it's a recreational court, a golf path, or a parking lot. Applied over the subgrade, CASORON soon begins to emit a weed-killing vapor. This gas is trapped under the asphalt, forming a long-lasting protective blanket against weed breakthrough. Straying roots from ornamental plants bordering asphalt surfaces can't damage the surface because CASORON is a "root-inhibitor." The tips of the ornamental roots stop growing when they come in contact with the CASORON-treated soil, and no harm is done to the ornamental.

CASORON is also perfect for weed control around all kinds of ornamentals and trees. Use it in parks, beside buildings, along highways, in cemeteries, or almost anywhere to eliminate the need for costly, time-consuming close trimming and mixing. It effectively kills more than 65 perennial and annual weeds without harming ornamentals or sterilizing an area for future planting.

THOMPSON-HAYWARD CHEMICAL COMPANY
A NORTH AMERICAN PHILIPS COMPANY
P. O. Box 2383
Kansas City, Kansas 66110

"STOP! All pesticides can be harmful to health and the environment if misused. Read the label carefully and use only as directed."

5-6860R

Circle 124 on free information card

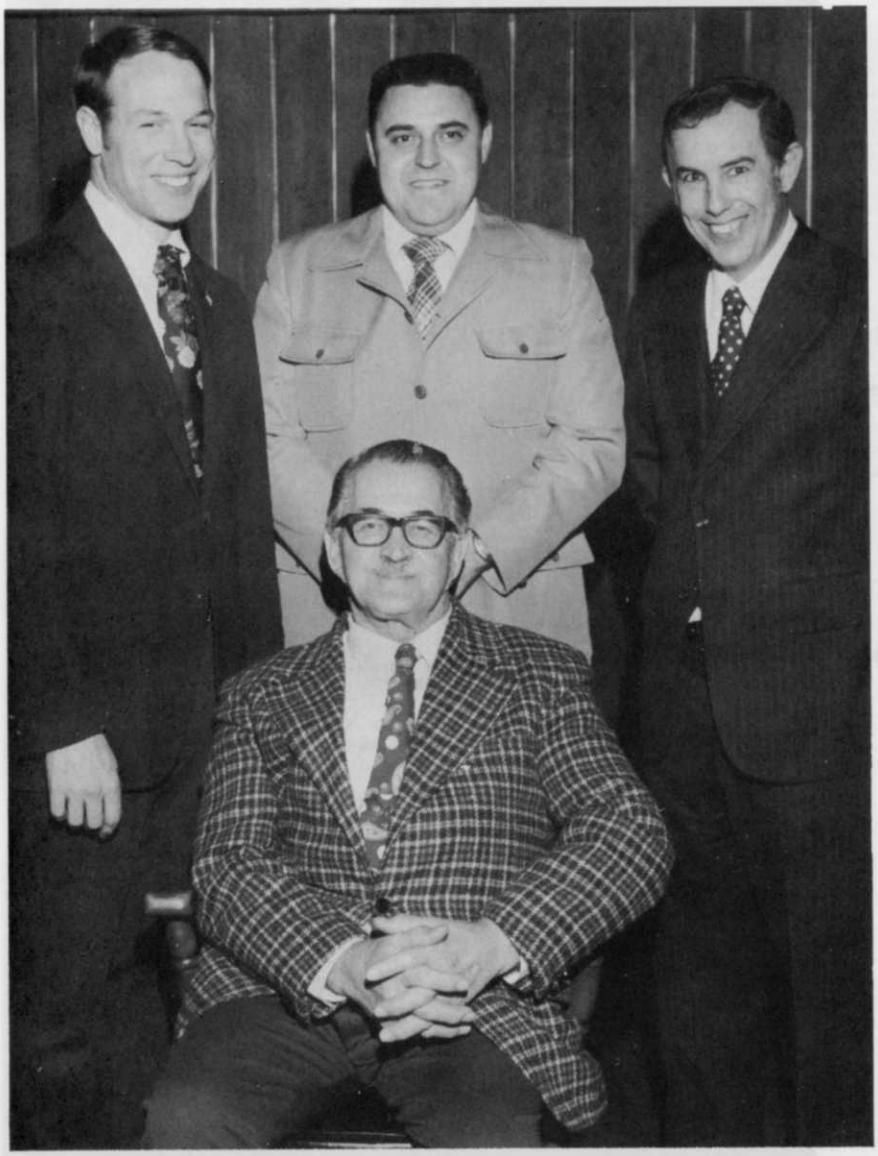
Midwest State Officials Search for Amur

Recent findings of amur (grass carp) in Minnesota and Wisconsin have officials of thosse states nervously searching ponds and lakes and streams, trying to keep the species from proliferating.

Officials of those two states say they have found that while amurs feast on vegetation in weed-choked lakes, weed beds are only controlled with dense populations of the fish. Officials also said the amurs preferably feed on insects.

The destruction of rooted vegetation by amurs, Minnesota biologists say, will result in prolific algae blooms because the inefficient digestive systems of the amur passes partly digested plant matter into the water, thereby enhancing algae growth. And when algae takes over a pond, its demand for oxygen results in summer and winter kills of fish, Jim Dudas reported in the *Cleveland Press.*

"Arkansas has experimented with the amur extensively," according to Tom Wasson, fisheries biologist of the Ohio Wildlife Division. "But we don't know how they will react to this climate and until there has been extensive research by the U.S. Fish and Wildlife Service we feel they could be a problem." He said the maximum penalty in Ohio for possessing or importing amur is $200 per fish.



New officers of the Pennsylvania Turfgrass Council recently elected are (seated) Dr. Fred V. Grau; (standing, from left), C. William Black, superintendent at Fountain Head Country Club, Hagerstown, Md., vice president; Arthur D. Wick, Lakeshore Equipment & Supply, Sewickley, Pa., president; and David M. Boyd Jr., D. M. Boyd Co., New Wilmington, Pa., treasurer.

Control Program Developed For Highway Landscape Pests

An integrated control program for highway landscape pests is under development in California. Among the pests in the landscape system are stem-feeding aphids. Formerly, the shrubs were treated with organophosphate insecticides to control early outbreaks of these aphids.

This treatment, while effective in temporarily suppressing the aphid populations, kills parasitoids and predators of both the aphid species and the red-humped caterpillar, another important pest in the highway landscape. Soap sprays have been a traditional means of aphid suppression for over 100 years and are considerably less toxic to insects than organophosphate insecticides. This it seemed possible a dilute soap spray could provide the required suppression of the aphids and probably cause less mortality among the parasitoids and predators than would the newer insecticides, thus permitting more effective long-term biological control.

A specially formulated soap spray was effective for removal of the aphids on highway plantings in California. Water alone produced a removal rate of close to 50 percent, and a general pattern of increased removal rate with higher concentrations of the soap solution was noted. The maximum soap concentration tested, 0.1 percent, produced removal rates of up to 79 percent. The work was reported in the *Journal of Economic Entomology* and excerpted in the *Journal of Arboriculture.* The work was done by Dudley Pinnock, Richard Brand, James Milstead and Nancy Coe.

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Jobs too small for big specialized equipment can add up to a punishing expense in manpower. Hauling. Mowing. Tilling. Grading. Loading. Trenching. Backfilling.

The intermediate size Bolens HT-20 Tractor can cut that expense by quickly adapting to over a dozen custom matched attachments including mower, tiller, bucket loader, back hoe, rakes, blades and brooms.

The foot operated hydrostatic transmission goes from forward to reverse without clutching or changing gears. Perfect for close-quarters work. Allows optimum power/speed combinations with hands free to operate hydraulics.

More than just a lawn and garden tractor, the HT-20 is powered by a 19.5 hp twin cylinder Kohler engine. The channeled steel frame, massive rear axle/differential and heavy duty front axle give a full day's work. Day after day.

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They cut the grass and the workload. In one pass. When a Bolens Mulching Mower cuts the grass, it also cuts and recuts the clippings into tiny particles that are blown down into the turf. There, they disappear and quickly decompose. No clippings. No clean-up. No thatch build-up. The fine mulch actually feeds the turf while the crew moves on to other jobs.*

3, 4 and 5 hp models are specially built for commercial and institutional use. Straight-thru steel axles, rugged all-steel deck, tough one-piece handle and positive cutting height adjustment. Bolens Mulching Mowers. Tough, economical answers to your continuing turf maintenance program.

*For a free copy of a University study on nitrogen return, contact FMC Corporation, Port Washington, Wisconsin 53074.

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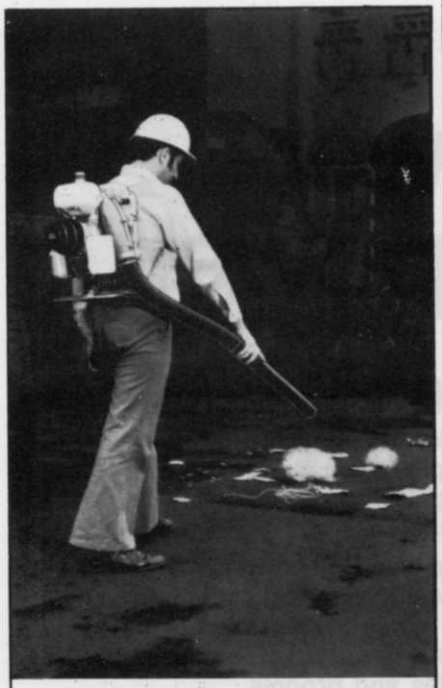

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Air brooms come in two versions—with wheels or with shoulder straps. Wheels look comfy and modern, all right. But for blowing leaves out of flower beds, rock gardens or from under shrubs, for cleaning staircases, roofs, seat rows in arenas and convention centers, up ladders or down ships' holds, in trucks and rolling stock, or for blowing snow off a car dealer's merchandise on a cold Saturday morning—SOLO's ultra-mobile lightweight knapsack blowers have no wheeled competition. The SOLOs go where wheels don't.

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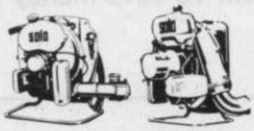

We offer two models, of 3 hp/35 cc. and 5 hp/70 cc., with special dust filters, comfortably padded adjustable shoulder straps and with a history of well-nigh 1,000,000 sales to back them up.

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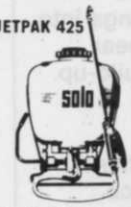

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This 180,000-square-foot multiple occupancy warehouse in Imeson International Industrial Park, Jacksonville recently received the Florida Nurserymen and Growers Award of Excellence. The landscape design using grassed mounds and berms as well as mature trees indigenous to north Florida was created by Michael A. Gilkey of Hartwig & Associates, Jacksonville.

Hyacinth Control Society Changes Organization Name

The Hyacinth Control Society has changed its name to The Aquatic Plant Management Society, which its members believe better reflects the thrust of the organization.

The change was decided at the organization's recent annual meeting in San Antonio, Texas, and the new title indicates the broad interests of the society membership. Ray A. Spirnock, of the central and southern Florida flood control district in Lakeworth, is the new president.

Horticulture Legally Part Of Agriculture, Exec Says

Over the past decades, the nursery industry has been involved in numerous battles to defend its rightful place as a part of the broad concept of agriculture in federal, state and local statutes.

"For the past 38 years," explained American Association of Nurserymen executive vice president Robert F. Lederer, "the AAN has led the battle to retain the legal status of horticulture as part of agriculture. And over those years we have won many significant victories. The most recent and one of the most important was in the energy field where horticulture retains its position in the agricultural priority for fuel.

"Unfortunately, the battle is a constant one. The subject continually arises in all sorts of federal, state and local legislation. For this reason, we have had our attorneys prepare a catalog of AAN victories in this area to help others in the nursery industry defend its position as part of agriculture," Lederer said.

The *AAN Special Summary on Legal Status of Horticulture* reviews the status of horticulture under the principle federal statutes — wage/hour, labor, tax, OSHA, social security, energy and interstate commerce — and covers the major state statutes in general.

"When involved in questions of definition for the purposes of state and local legislation it has often proven useful to be able to present to a legislature, court or administrative agency a review of the treatment of horticulture in other areas of the law," Lederer said. "That is the purpose of this summary."

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Herbert Collier
Assistant Director of the Physical Plant
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"The WEED EATER and one man can do the work of four men."

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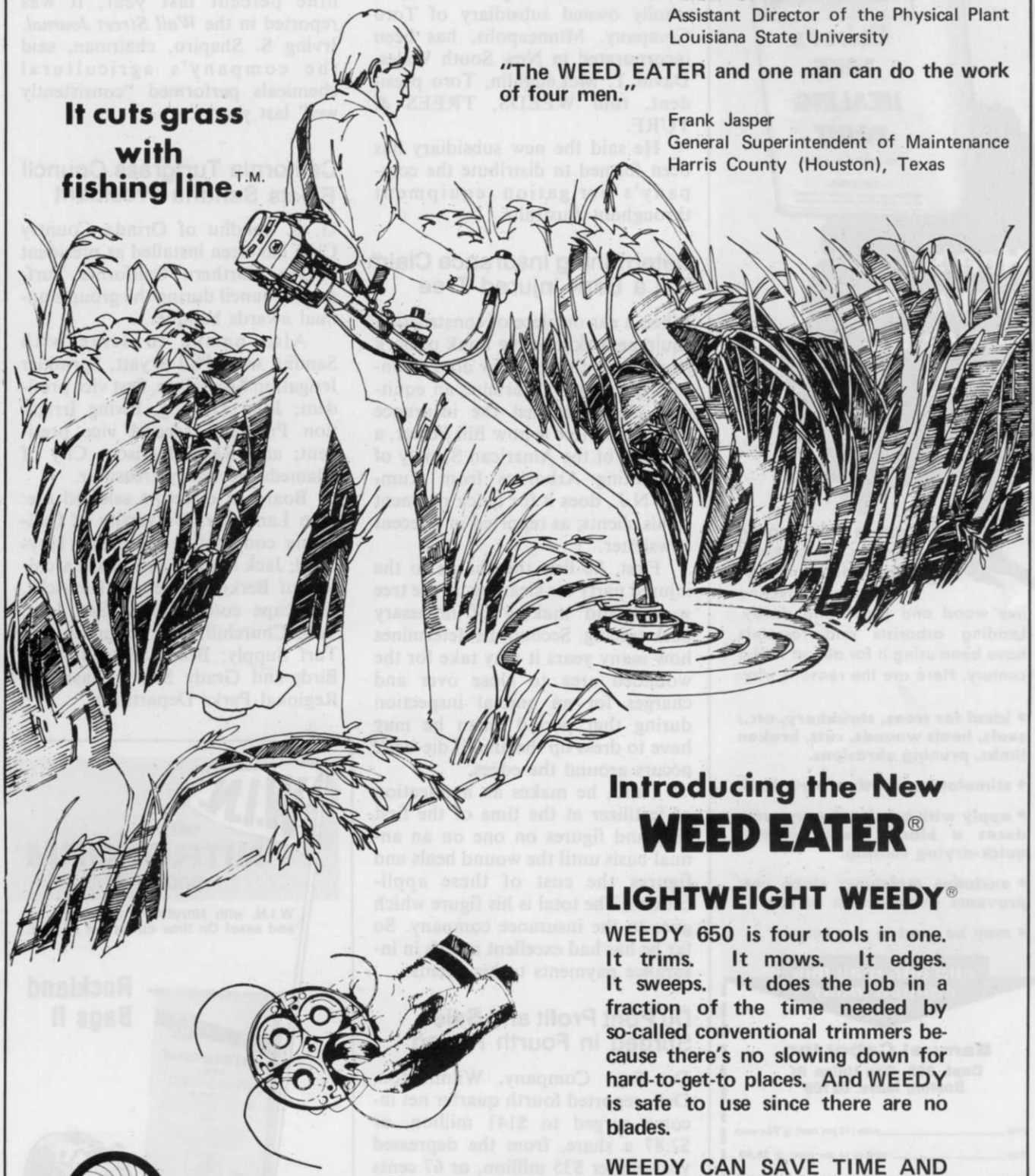
It cuts grass with fishing line. T.M.



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Toro Expands to Australia

Toro Australia Pty. Limited, a wholly owned subsidiary of Toro Company, Minneapolis, has been incorporated in New South Wales, David T. McLaughlin, Toro president, told WEEDS, TREES & TURF.

He said the new subsidiary has been formed to distribute the company's irrigation equipment throughout Australia.

Determining Insurance Claim For a Bark-Injured Tree

When a car or piece of construction equipment skins a big hunk of bark from a client's tree, how does a consulting arborist determine an equitable claims against the insurance company? Here is how Bill Porter, a member of the American Society of Consulting Arborists from Rumson, N.J., does it for quick payment to his clients, as reported in a recent newsletter.

First, he lists the charge to the injured party for cleaning up the tree wound and making of necessary bark tracing. Second, he determines how many years it may take for the wounded area to close over and charges for an annual inspection during that period when he may have to dress up the area if die-back occurs around the edges.

Third, he makes an application of fertilizer at the time of the first visit and figures on one on an annual basis until the wound heals and figures the cost of these applications. The total is his figure which goes to the insurance company. So far he has had excellent results in insurance payments to his clients.

Du Pont Profit and Sales Surged in Fourth Period

Du Pont Company, Wilmington, Del., reported fourth quarter net income surged to $141 million, or $2.87 a share, from the depressed year-earlier $35 million, or 67 cents a share. Sales increased 20 percent to $1.96 billion from $1.63 billion.

That brought net for all last year to $272 million, down 34 percent from 1974's $404 million. Sales rose five percent to $7.22 billion from $6.91 billion, reflecting higher average selling prices last year. But physical volume of shipments fell nine percent last year, it was reported in the *Wall Street Journal.* Irving S. Shapiro, chairman, said the company's agricultural chemicals performed "consistently well' last year.

California Turfgrass Council Elects Sandhu President

G. S. Sandhu of Orinda Country Club has been installed as president of the Northern California Turfgrass Council during the group's annual awards banquet.

Also named to serve with Sandhu were Phil Wyatt, Sprinkler Irrigation Specialists, first vice president; John Deming, Ewing Irrigation Products, second vice president; and Rich Harrison, City of Alameda, secretary/treasurer.

Board of directors selected are: Don Lancaster, University of California cooperative extension, Hayward; Jack Mahshi, landscape architect of Berkeley; George Henrichs, landscape contractor of San Jose; Tom Churchill, Bay Irrigation and Turf Supply; Bruce Watson, Rain Bird; and Grady Simril, East Bay Regional Parks Department.

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Ohio Reclamation Symposium Is August 9-12 in Wooster

Interest in returning disturbed lands to productivity has intensified recently as more lands are being disrupted in the search for energy. In light of this interest, a group of scientific organizations has organized a symposium on "Reclamation of Drastically Disturbed Lands" which will bring together experts from several disciplines to summarize what is known about reclamation and to identify areas where more information is needed.

The symposium will be held at the Ohio Agricultural Research and Development Center in Wooster, Ohio August 9-12. It is being sponsored by the American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Society of American Foresters, Soil Conservation Society of America, the U.S. Environmental Protection Agency and other organizations.

For further information, contact: Dr. Paul Sutton, Ohio Agricultural Research and Development Center, Route 6, Caldwall, Ohio 43724.

Researchers Urged to Work With Nursery Businessman

One of the most serious problems in the nursery industry is the lack of communication between the research scientist and the nursery businessman, according to Robert F. Lederer, executive vice president of the American Association of Nurserymen. His remarks were before the Symposium on Better Trees for Metropolitan Landscapes, held in Washington, D.C. recently.

"All of the nursery businessmen I know need the results of the efforts of all of the research scientists I know," Lederer said. "In order to be properly oriented, research scientists need the opinion of the nursery businessmen. But how often do the two get together? When researchers come up with results, often they are held back waiting for publication in a scientific journal where credits as a scientist can be made. Often, good useable results never arrive at that point where they can be put into operation, because people who can use them are not those who read scientific journals.

"When you develop your research program," Lederer told researchers, "keep very much in mind that your inclination may be to develop projects that are of most interest to you. Overcome that inclination. Base your projects on what will be of most practical value to producing better products, better chemicals, better plants for our customer.

"I ask you, why work in a vacuum?" he said. "If your goal is to develop a fine Norway maple, the place to start may very well be by asking the municipal arborist or forester or all of our northern growers to share with you the best Norway maple they know of. He can take you to it right away — he has been watching it for years, but nobody ever asked him about it."

Applying engineering designs which "Sound Conditioned"* our industrial scrap reduction machinery, Mitts & Merrill can modify our brush chippers for low noise levels. At the same time, those engineering features which have made Mitts & Merrill the leader for years have been retained.

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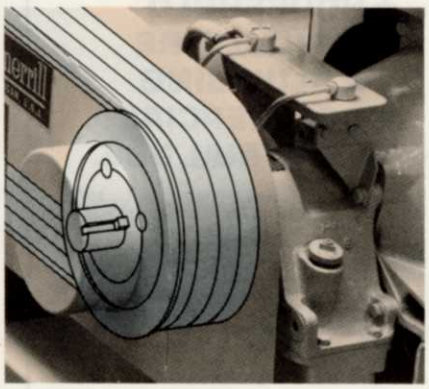
Staggered knife pattern, for years a Mitts & Merrill feature, has always resulted in a lower noise level. First, by segmenting the noise source. Second, through smoother cutting action. Third, by producing smaller chips.



Optional torque converters and the heaviest steel cylinder — even without an external flywheel — combine to give positive cutting action under the most rugged conditions. Isolates the engine from shock. Minimizes maintenance.

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Report Discusses Managing Power Line Vegetation

There are about 3,600 electric utilities in the United States. In 1971 it was estimated that these utilities were operating more than 300,000 miles of overhead transmission lines, occupying about four million acres of land for rights-of-way, according to a recent report done by the State University of New York.

With the demand for electrical power doubling each decade, it was estimated that 100,000 miles of new transmission lines would be constructed on 1.5 million acres of rights-of-way each decade for the rest of the century. This would mean an estimated 600,000 miles of overhead transmission lines on seven million acres of land by the year 2000.

Vegetation management on these lines is a matter of great concern to the power companies and to others concerned with the environment. This report was written after an extensive review of the literature, interviews with the vegetation managers and researchers, and on-site inspections of many transmission lines throughout the eastern United States. Copies of this report are available upon request from the State University of New York, College of Environmental Science and Forestry, Syracuse, N.Y. 13210.

Rhodia Inc. Announces Plan For New Herbicide Plant

Rhodia Inc., Monmouth Junction, N.J., has announced plans to construct a new herbicide manufacturing plant at its Portland, Ore. location.

When completed this fall, the plant will double Rhodia's production of two methyl, four chlorophenoxyacetic acid (MCPA) as well as bring on stream ability to produce two methyl, four chlorophenoxyproprionic acid (MCPP). The company said MCPP is a herbicide used to control weeds and clover in turfgrass and lawns. Spokesmen for the company said the production of both products has been planned to supply the current and anticipated market needs and the plant can be expanded further as the market requires.

Representatives from 19 states participated in the recent legislative conference sponsored by the American Association of Nurserymen in New Orleans. The meeting, attended by state and regional association executives and legislative chairmen, dealt primarily with state legislative problems, such as taxation, labor laws, OSHA, license laws, etc. Participating in the conference were: (bottom from left) Roy Hacanson, Wash.; Gary Gern, Mo.; AAN administrator Leo Donahue; Honore Hacanson, Wash., Curtis Peterson, Fla.; Jane Barry, Mont.; AAN president Palmer W. Bigelow, Jr.; AAN executive vice president Robert F. Lederer; and Joe Weston, Mo. (middle from left) Dr. James A. Foret, La.; Harold Thornhill, Ala.; Rudy Hough, Miss.; Hunter Boulo, Ala.; David Spencer, Ill.; Keith Law, Minn.; Dr. J. H. Tinga, Ga.; Larry Little, N.J.; and Bill Bradshaw, Tex. (top from left) Jack Wick, Calif.; George Hoar, Utah; Charlie Barr, Conn.; Hugh Vann, N.C.; David Laird, Va.; Howard Davis, Pa.; Bill Fullingim, Tex.; Charlie Dunn, Fla.; Kent Langlinais, La.; and John Flemer, N.J.

It can take months to compact a green. It takes 60 minutes to fix it.

Greens aeration is one of the most important maintenance jobs you have. Months of compaction can damage a green by preventing air, water, and fertilizer from penetrating the surface. Proper aeration is essential. But it must also be done quickly to get your course back in play and keep your golfers happy.

The Greensaire II does both. It cleanly penetrates the soil, removing cores up to 3″ deep. It is so precise that the holes it makes do not affect the true roll of a golf ball. And the Greensaire is fast, aerating the average green in 60 minutes or less.

If you're satisfied with your soil content, the Greensaire's Core Processor attachment can make aerating even faster. It catches the cores, separates good soil from debris, puts the good soil back on top, and bags the debris. You top dress and collect thatch at the same time you aerate.

Maybe you don't need the big capacities of the Greensaire II and Core Processor, but you do want the same fine capabilities. Then choose the Greensaire 16. Instead of a 24″ swath, you have a 16″ width. You can use the same selection of tines and the convenient windrow attachment makes core removal easy.

And like all Ryan equipment, these machines are built to last. We believe longevity is just as important as performance.

Whether your greens need aerating twice a year or twice a month, there's no better or faster way than with Ryan aerating equipment.

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Standing behind a model of a new bisphenol-A plant to be built at Haverhill, Ohio, Duncan J. MacLennan (left), president, and William W. LaRoche, vice president, USS Chemicals, Pittsburgh, discuss details of the planned 120-million-pound-per-year facility. End uses of the product include fungicides, bactericides and rubber compounds.

Four Medicap Meetings

Creative Sales, Inc., is sponsoring four dealer-applicator meetings this month: two in Ohio and two in Michigan, to review the firm's Medicap injection program . . . iron chlorosis, manganese chlorosis and an update on the experimental systemic insecticide program. EPA clearance for the latter program (Orthene/Medicaps) is expected later this month.

Locations and dates for the meetings: Dayton, Ohio, Imperial House South, March 16; Columbus, Ohio, Ramada Inn North, March 17; Southfield, Mich., Ramada Inn, March 18; and Grand Rapids, Mich., Hospitality Inn, March 19.

The Ohio program will feature Dr. Elton Smith, Extension Specialist in Landscape Horticulture with The Ohio State University. The Dayton, Southfield and Grand Rapids meetings will also feature Dr. James Kielbaso, Associate Professor of Forestry with Michigan State University.

Dr. Smith will discuss Ohio State results with iron and manganese, and Dr. Kielbaso will talk on manganese deficiency/maple decline. Dr. Kielbaso has indicated that manganese deficiency is a major contributing factor to much of the north central and New England maple decline.

Registration ($5 in advance) can be made with Warren D. Wolfe, 402-727-4800.

Response of Woody Species To Urban Air Pollutants

In a recent study conducted at Rutgers University in New Jersey, it was determined that among the gaseous pollutants that caused significant damage to plant life were hydrogen fluoride and ozone. The study was done by Eileen Brennan and Ann F. Rhoads.

They said sulfur dioxide damage was conspicuously absent, no doubt due to legal restrictions on burning high sulfur fuels during the period of the study, 1973 through last year. A particulate causing extensive damage was cement dust, and this occurred in a native oak forest 30 years after the dust had been emitted into the ambient air from a local source. Along heavily traveled highways another particulate, cadmium, was detected in appreciable quantities in certain tree species, particularly in pin oak. The paper appeared in the *Journal of Arboriculture*.

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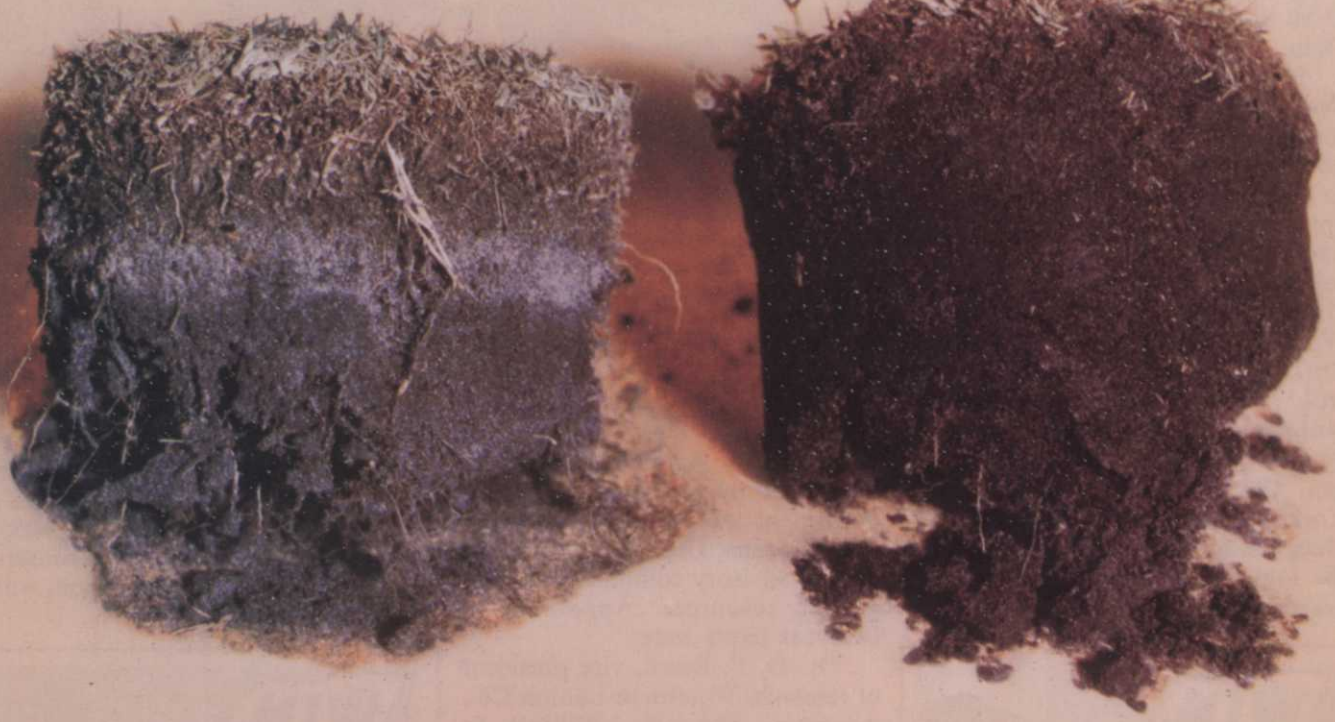

Photograph of plugs removed from test plots at University of Florida, Plantation Field Laboratory, Ft. Lauderdale, Florida. Research is continuing.

It's a proven fact that thatch is a major problem in highly maintained turf. Thatch reduces air and water movement into the soil, impedes utilization of fertilizers, and provides a favorable environment for insects, fungi, and diseases. The sample on the left shows what happens when thatch is allowed to build up. And look at that compaction layer.

Now take a close look at the plug on the right. Bio de-thatch was applied to this turf. Before total decomposition, the grass turned a darker green and the rate of growth increased. The actual decomposition became apparent approximately 8 months after application. By the end of 12 months, most of it had disappeared and the changes in soil structure were dramatic.

It's readily apparent that the micro-organisms in bio de-thatch have done their job well—the thatch is gone, leaving a rich humas for better water penetration, retention, and improved soil tilth. It all adds up to a stronger, healthier turf when using this proven product. If you'd like more information on bio de-thatch see your local USSAC distributor or, write to USS Agri-Chemicals, P.O. Box 1685, Atlanta, Georgia 30301.

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Granular Linuron Control Of Poa Annua In Bluegrass

Poa annua in Kentucky bluegrass varieties grown for sod production purposes can be satisfactorily controlled with 2.5 to 5.0 kg/ha of granular linuron, according to a report given at the recent 30th Annual Meeting of the Northeastern Weed Science Society in Boston. The report was prepared by Dr. Paul Henderlong, Ohio State University professor, and Paul L. Jacquemin, research agronomist at O.M. Scott & Sons Co., Marysville, Ohio.

In their paper, entitled "Selective Control of *Poa annua* in Kentucky Bluegrass", the researchers noted their studies were conducted to determine the minimum effective application rates of granular linuron under varying environmental and soil conditions. A representative for O.M. Scott & Sons Co. told WEEDS TREES & TURF its ProTurf Selective *Poa annua* Control is registered in Colorado, Nebraska, Minnesota, Iowa, Pennsylvania, New Jersey, Michigan, Ohio, Indiana, Illinois, New York and Wisconsin for use on bluegrass sod fields only, because of the low linuron tolerance of other grass species.

A design award for the belt-tensioning adjustment assembly on belt-driven centrifugal pumps was recently given to Hypro Division, Lear Siegler, Inc., by the Gray & Ductile Iron Founders' Society. The award was accepted on behalf of Hypro by Ramon Pareja (right), engineering vice president. It was presented by Albert W. Gruer Jr. of the Society. Hypro is in St. Paul, Minn.

Butz Names 12 Scientists To Plant Genetics Board

Secretary of Agriculture Earl L. Butz recently announced the appointment of 12 scientists to a United States Department of Agriculture advisory committee of plant genetic resources. Appointed to two-year terms were:

Dr. D. F. Beard, vice president of research, Waterman-Loomis Co., Adelphia, Md.; Dr. William L. Brown, president, Pioneer Hi-Bred International, Inc., Des Moines, Iowa; Dr. Paul J. Fitzgerald, associate deputy administrator, North Central Region of USDA's Agricultural Research Service, Peoria, Ill.; Dr. W. H. Gabelman, professor of horticulture, University of Wisconsin-Madison; Dr. Charles O. Gardner and Meyer Katz, professors of agronomy, University of Nebraska-Lincoln; Dr. Harold D. Loden, executive vice president, American Seed Trade Association, Inc., Washington, D.C.; Dr. Don C. Peters, professor and head, Department of Entomology, Oklahoma State University, Stillwater; Dr. Charles M. Rick, professor and geneticist, University of California-Davis; Dr. H. F. Robinson, chancellor, Western Carolina University, Cullowhee, N.C.; G. F. Sprague, professor of plant breeding and genetics, University of Illinois at Urbana-Champaign; and Dr. Sterling Wortman, vice president, Rockefeller Foundation, New York, N.Y. Robert W. Long, assistant secretary of agriculture for conservation, research and education, will serve as chairman.

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He's Dr. Paul M. Alexander, renowned agronomist and one of the world's leading experts on the growth and care of turf. As head of a newly organized C.B. Dolge team of experts, he's prepared to help you solve those stubborn turf problems that can adversely affect your business.

You can contact Dr. Alexander through any of the 40 C.B. Dolge representatives east of the Mississippi, under the direction of Turf Manager, Sal Vento, or through the company's southern subsidiary, GOLTRA, Inc., whose 8 representatives are directed by Charles Dolge.

Whatever your turf problem, our "Answer Man," Dr. Alexander and his C.B. Dolge team of experts have the answers – and a complete line of Golf and Grounds Maintenance products – to solve them.

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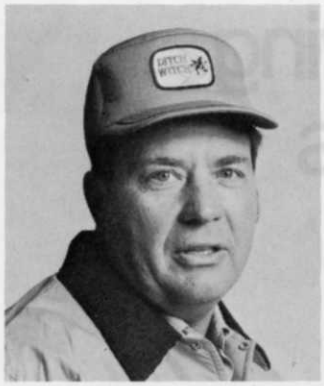

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"Let's talk about the reasons the Modularmatic concept can save you a lot of money!"

"A Ditch Witch Modularmatic can do more different underground jobs than any other machine!

One vehicle using interchangeable work modules — that's what our Modularmatic concept is all about. An example of what this can mean to you: Let's say you have a big trenching job now — buy the right Modularmatic vehicle with a trenching module. When that job is finished, a vibratory plow contract comes up. Your major investment — the Modularmatic vehicle — is already bought and paid for. All you need is a vibratory plow module and you're ready to go. Modularmatics get the job done, give you greater job flexibility and help spread equipment costs.

We'd like the chance to tell you more. We'd like to give you a free demonstration to show you what a Modularmatic can do. Remember, at Ditch Witch, we tell it to you straight!"

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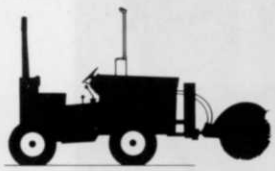
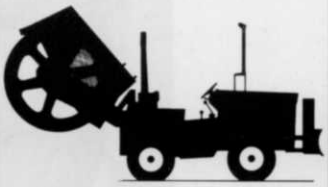
Vibratory Plow

Clean-Sweep Broom

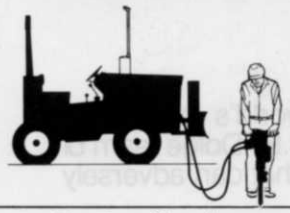


Earth Saw

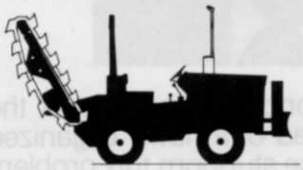


Combo

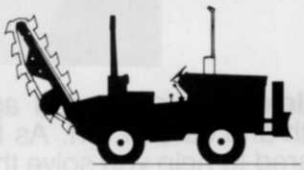
Hydraulic Breaker



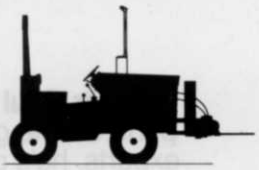
Offset Trenching Module



Trenching Module

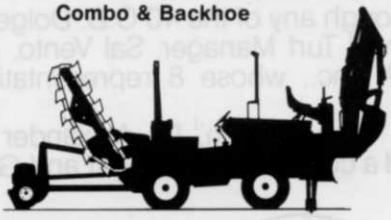


Boring Unit



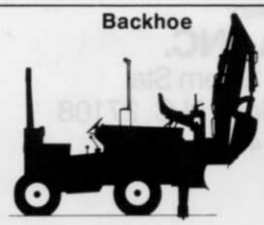
Front-end Loader

Combo & Backhoe

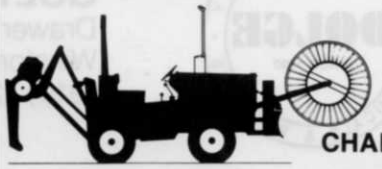


Let your Ditch Witch man show you the Modularmatic combination that best meets your requirements. Modularmatic versatility is available in power ranges from 30-HP to 100-HP.

Backhoe



Reel Carrier



Ditch Witch . . . equipment from 7- to 195-HP.

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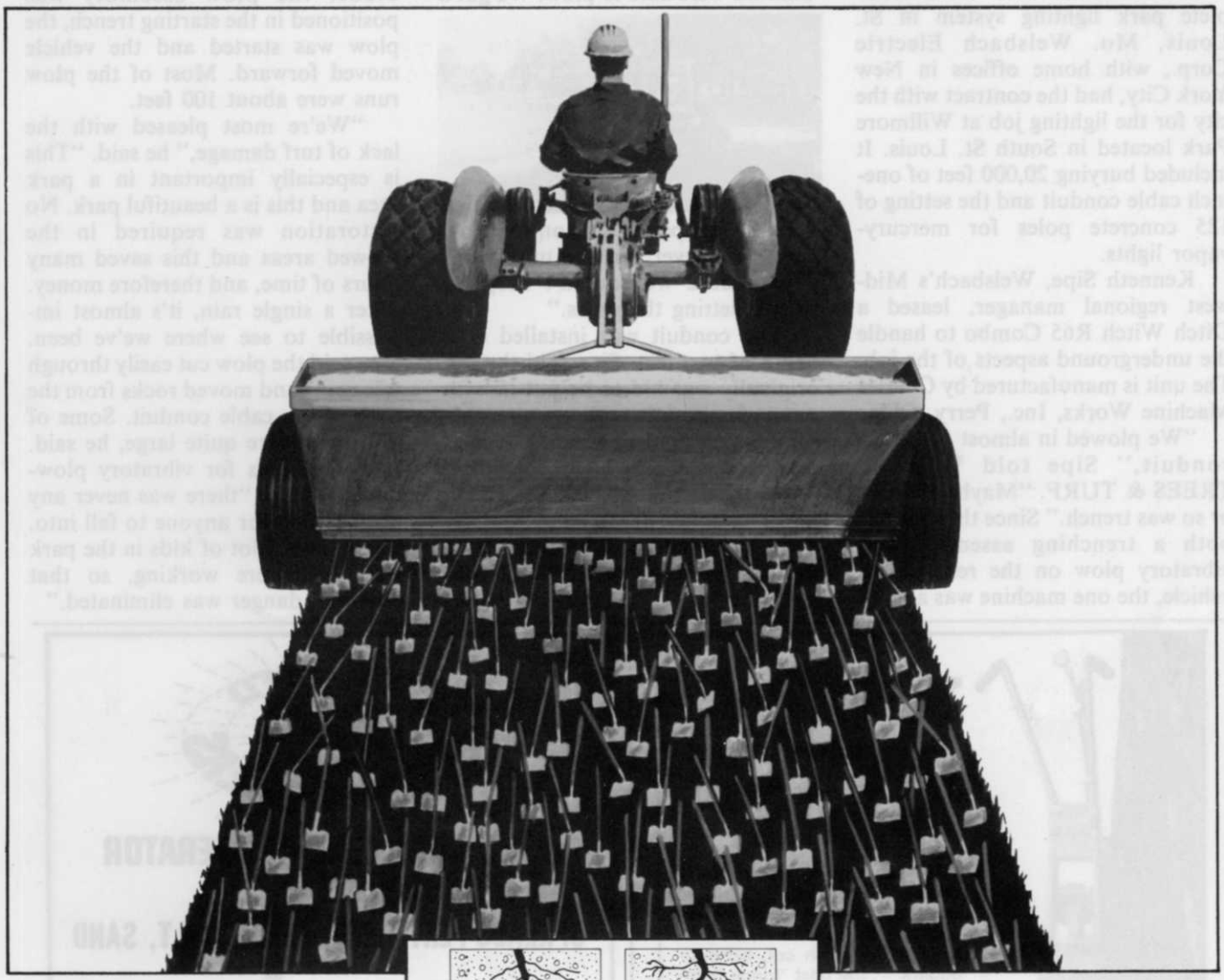
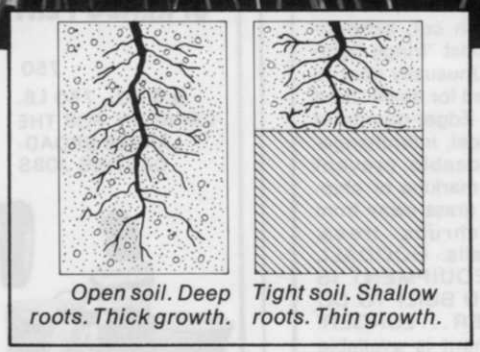
Soften soil this easy natural way.

Lawn & Garden Gypsum loosens heavy clay; stimulates vigorous growth.

Works like millions of tiny hoes.™





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Apply this neutral, non-burning soil conditioner to grassy areas, shrub and flower beds—wherever compacted soil can stunt normal root development. GRAND PRIZE® Lawn & Garden Gypsum breaks up tight soil, allows air and water to penetrate, helps fertilizers really get down to business.

And GRAND PRIZE also supplies essential sulfate sulfur and available calcium, promotes decomposition of organic materials, helps to neutralize damage from deicing salt and stray pets. Get all the facts on this ecologically-safe product that does so much for so little cost. Write to us at 101 S. Wacker Drive, Chicago, Illinois 60606, Dept. WTT-36

CHEMICALS DIVISION

UNITED STATES GYPSUM

Primary supplier of secondary plant nutrients

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Underground Installation Done with Vibratory Plow

Vibratory plowing has proved to be the most economical and efficient way of making the underground electrical installations for a complete park lighting system in St. Louis, Mo. Welsbach Electric Corp., with home offices in New York City, had the contract with the city for the lighting job at Willmore Park located in South St. Louis. It included burying 20,000 feet of one-inch cable conduit and the setting of 125 concrete poles for mercury-vapor lights.

Kenneth Sipe, Welsbach's Midwest regional manager, leased a Ditch Witch R65 Combo to handle the underground aspects of the job. The unit is manufactured by Charles Machine Works, Inc., Perry, Okla.

"We plowed in almost all of the conduit," Sipe told WEEDS, TREES & TURF. "Maybe 100 feet or so was trench." Since the unit has both a trenching assembly and vibratory plow on the rear of the vehicle, the one machine was able to do both the trenching and plowing. "We had never plowed this type of job before," he said, "and I'm extremely pleased with the way it went. I don't believe it would have been possible to trench any faster than we were able to plow. We got a

good 30 feet per minute on the plow runs. We never ran the unit a full day because we couldn't keep up with it setting the poles."

The conduit was installed at a depth of two feet. Sipe said the job originally was bid to be put in with one-inch conduit with an alternate of one-inch rigid PVC and a second alternate of one-inch cable conduit. "The third method was so much more economical," he said, "the city chose to go with it. It's the first time the city has used this type of construction."

Because of the diameter of the cable conduit, the material was pulled into the ground with the vibratory plow. A short starting trench was dug, the cable conduit was attached to the plow's pull blade, the plow assembly was positioned in the starting trench, the plow was started and the vehicle moved forward. Most of the plow runs were about 100 feet.

"We're most pleased with the lack of turf damage," he said. "This is especially important in a park area and this is a beautiful park. No restoration was required in the plowed areas and this saved many hours of time, and therefore money. After a single rain, it's almost impossible to see where we've been. Sipe said the plow cut easily through tree roots and moved rocks from the path of the cable conduit. Some of the rocks were quite large, he said. "Another plus for vibratory plowing," he said, "there was never any open trench for anyone to fall into. There were a lot of kids in the park while we were working, so that potential danger was eliminated."

The fringe fighter!

No grass cutting job is really complete until all the "fringy" edges are gone. Put the finishing touches on any size job with Goodall full-width cut, trimmer-edgers . . . the best "fringe fighters" available. Unusually easy to handle. Designed for those "hard to get" places. Edger-guards of heavy-gauge steel, interchangeable and replaceable, prevent the blade from marking or chipping and direct grass away from monuments, shrubs, trees, fences and walls. GOODALL LAWN-TURF EQUIPMENT IS DESIGNED AND BUILT TO DO THE JOB BETTER . . . LONGER! Goodall equipment is available from 8-inch to 52-inch cut.

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9.6 BU., 750 LB. CAPACITY FOR THE LARGER BROADCASTING JOBS

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Write for new colorful 8-page brochure on full line of 8 sizes and many variations to suit particular needs.

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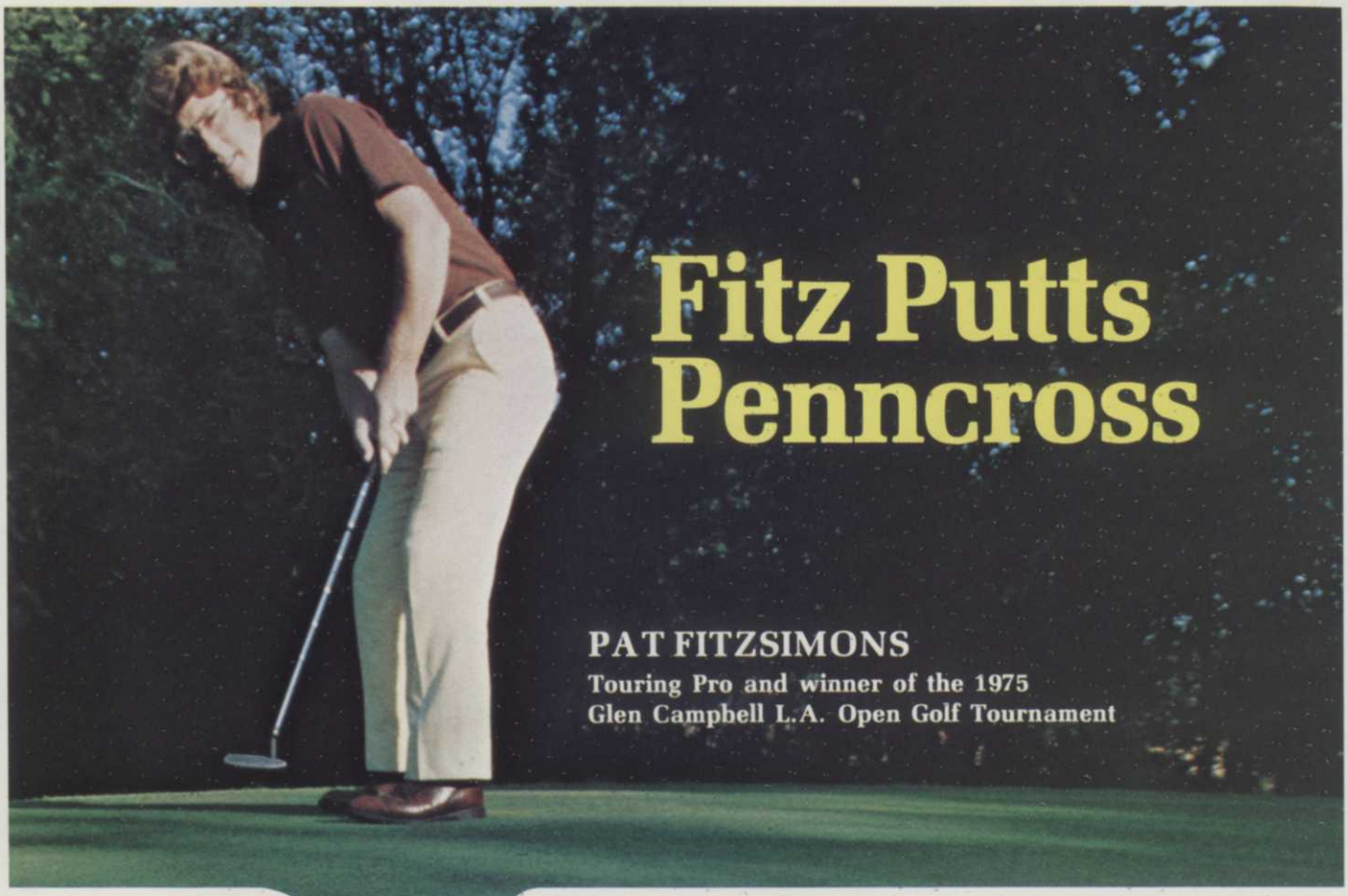

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PENNCROSS CREEPING BENTGRASS

Today's most popular variety of creeping bentgrass is found on golf courses around the world. Penncross can take the heat in warm climates and stays green longer in the fall up north. Penncross is more genetically uniform, resists disease better and establishes quicker than conventional bents. What does this mean to Pat Fitzsimons? "Consistent greens are important to me and Penncross greens have the uniformity that gives me greater confidence in putting."

"The Grass Designed For Golfers"

Write for free pamphlet on planting and maintaining Penncross greens.

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For ad on following page circle 158 on free information card ▶

PRO4

Diamond Shamrock

Show your club the results.

For beautiful results, there's no beating the Diamond Shamrock Pro-4 turf system. The system: DACTHAL®, DACONATE®, DACAMINE®, and new DACONIL 2787® flowable fungicide. It's the system you need for excellent control of weeds and fungus diseases.

Daconil 2787, flowable fungicide. Daconil 2787 is now available in convenient flowable and wettable powder form. This popular broad-spectrum fungicide has been a leader for years in disease control. It controls 10 fungus diseases that plague you on greens, fairways and tees. And, Daconil 2787 can be used from spring to fall, even in hot, humid weather.

Dacthal, the preemergence turf herbicide. Dacthal performance is the standard by which many others rate

their herbicides. Dacthal kills weeds as they germinate. Stops crabgrass, *Poa annua,* foxtail, and 15 other annual pests in turf and ornamentals. It is available in wettable powder and granular form.

Dacamine, the postemergence herbicide. Controls knotweed and other broadleaf weeds in fairways and roughs. Dacamine is a *non-volatile* diamine formulation of 2,4-D. Won't vaporize, even in hot weather . . . just avoid spray drift and follow label directions. Dacamine penetrates waxy leaves and translocates to the roots, killing the weed all the way down. Reduces the chances of regrowth.

Daconate 6, the postemergence herbicide. Finish off the stragglers with Daconate. It's the final touch in your weed control program. It gets rid of nutsedge, crabgrass, goosegrass, chickweed, wood sorrel and other tough, grassy weeds.

That's Diamond Shamrock Pro-4 . . . the weed and disease program for professional turf. Contact your turf chemicals supplier.

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Diamond Shamrock

AGRICULTURAL CHEMICALS DIVISION

Colorado Superintendents Choose Gary Vitt President

Gary Vitt, superintendent at Rolling Hills Country Club, Golden, Colo., is the new president of the Rocky Mountain Golf Course Superintendents Association. He replaces Jan Niedziela of Eagle Vail Golf Course.

Other officers are: Jack Maurer, Pinery Golf Course, vice president; Dave Tooley, Greeley Country Club, secretary-treasurer; and Dan Coffin, John Bartley and Jim Kaasch, board of directors.

Research Efforts Expanded By Diamond Shamrock Corp.

Diamond Shamrock Corp., Cleveland, has announced a multimillion dollar expansion at its T. R. Evans Research Center near Painesville, Ohio.

The first phase of the expansion will include the building of a new laboratory building for life sciences research. This expansion is part of the company's plan to increase its research effort by 20 percent in the next five years.

Circle 165 on free information card

Stauffer, Allied Chemical Post Fourth Period Gains

Allied Chemical Co., Morris Township, N.J., and Stauffer Chemical Co., Westport, Conn., reported large fourth quarter earnings gains. Stauffer's full-year profit was also ahead of 1974. Allied's was 20 percent lower than a year earlier, although 1975 was its second-best year ever.

Stauffer said fourth quarter net was $22.9 million, up 16 percent from $19.7 million a year earlier. Sales rose five percent to $239.1 million from $226.8 million. Allied said based on preliminary unaudited figures, its earnings in the final period were about $33.6 million, a 41 percent increase from $23.8 million of a year earlier. Allied said the company's chemical business, paced by fertilizers, had recorded increased earning during the year.

Nurseries Miss Bigger Sales, Merchandising Experts Says

One of the nation's foremost merchandising authorities told about 200 plant nurserymen recently they could be missing many opportunities for bigger sales.

Richard Marcus, president of Nieman-Marcus, Dallas, advised members of the annual Nurserymen's short course at Texas A&M University that sales can be improved by honoring three fundamentals: service, merchandising and an attractive physical environment. "Looking upon the nursery business from the standpoint of hobbyist, customer and merchandiser — and I am all three — I often see a lack of knowledge of the products and sometimes a lack of any selling at all," he said.

Too often there is little follow-through on sales, he said. The nurserymen should find out why some customers do not return. Established customers should be kept informed about any merchandise in which they are especially interested.

"Such practices as these will cost the retailer more, but they should pay off," Marcus said. He described effective merchandising as the ability to be innovative, to edit out what is unproductive. Customers should be made to feel important. Physical environment is also important to a successful business, he said.

Columbus Golf Association Awards Turf Scholarship

James E. Maxfield of Cincinnati is the second recipient of the Columbus District Golf Association agronomy scholarship at Ohio State University.

He has worked five years at the Camargo Country Club in Cincinnati and will work this season as Kings Island Golf Course near Columbus.

Vedder Elected President Of Aviation Association

James Vedder of Visco Flying Co., Inc., Imperial, Calif., has been elected president of the National Agricultural Aviation Association.

He succeeded James Maxwell of Benoit, Miss. Also serving with Vedder are vice president Don Holmes of Clay Center, Kansas; Alfred Dahl of Cogswell, N.D., secretary; and Hugh Wheelless of Dothan, Ala., treasurer.

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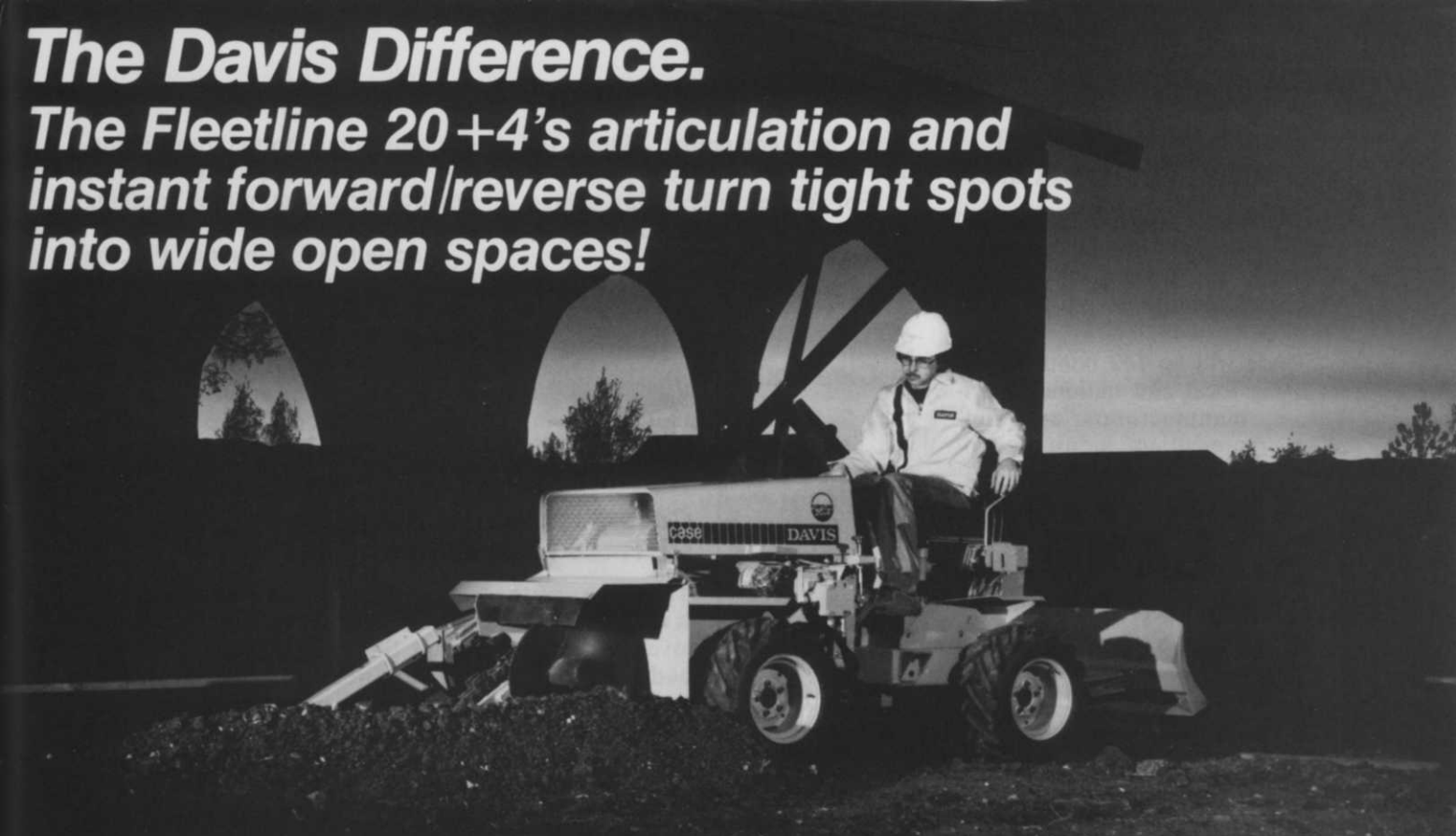
The Davis Difference.

The Fleetline 20+4's articulation and instant forward/reverse turn tight spots into wide open spaces!



Even with one hand behind you, the Davis Mono-Stick makes maneuvering no contest!

There's no better way to take on your underground chores than with the compact, highly maneuverable Fleetline 20+4.

It turns tight spots into wide open spaces to handle your trenching, plowing, backfilling and horizontal boring requirements.

This 18 hp rubber-tired trencher has 4-wheel Hydra-Static drive for instant directional change and equal speeds in either direction.

It trenches from 4" wide, 64" deep to 12" wide, 30" deep at varying speeds to match soil conditions.

The limited-slip differentials deliver equal torque to all wheels while hydraulic articulation provides a neat twist for ground-hugging traction!

It handles even the toughest jobs, while you perform all functions from a single control center, where the Mono-Stick makes maneuvering no contest.

See the Fleetline 20+4 at your Davis dealer, or call Davis Manufacturing toll free — 800/835-3016, and get the total scoop on The Davis Difference!

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Arizona Turfgrass Council Sets Annual Equipment Show

The Arizona Turfgrass Council will hold its Second Annual Turfgrass Materials and Equipment Show at Veterans Memorial Coliseum, Phoenix April 14.

There will be 140 booth spaces featuring local and national distributors, manufacturers and suppliers representing industry products and equipment. There will also be educational seminars.

For further information contact Ralph Hull, P.O. Box 4356, Phoenix, Ariz. 85030.

Siebenthaler Opens Firm In Clearwater, Florida

Jack Siebenthaler, landscape architect and a prominent figure in the environmental horticulture industry, recently opened his own private practice for design, public speaking and consultation.

Located in Clearwater, Fla., he has over 30 years of experience in the horticulture business. He is a former president of the Florida Nurserymen and Growers Association, lieutenant governor of the American Association of Nurserymen.

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We prepare you to cash in on countless money-making opportunities in modern landscaping and show you how, by easy steps, to start your own business part or full time. You will learn latest developments in Modern Landscaping, including creative design—plant propagation—revolutionary new methods of growing in manufactured soils—practical soil testing—growth regulators—the low down on fertilizers—easy ways of plant identification—estimating and contracting. My unique home study course features easy to understand assignments with careful detailed illustrations. Certificate Awarded. May. I send **FREE**, and without obligation, my informative **BOOKLET?**

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Toro® Groundsmaster 72 high-capacity trimming rotary mower.

Reason to buy #2

Full complement of quick-change implements. Snow blower. Leaf mulcher. V-plow. Hard surface broom. ROPS. Cab with ROPS. Works year 'round to save money.

For further information write The Toro Company, Dept. WTT-36, 8111 Lyndale Ave., Bloomington, Minnesota 55420.

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Compensation for Removal Of Trees Near Power Lines

The efforts of the Line and Properties Departments at Knoxville Utilities Board, Tennessee, are producing lovely flowering dogwood, flowering crabapple and redbud trees under Knoxville power lines rather than stubby, chopped-off-at-the-top silver maples or other large, fast-growing trees, according to Charles Hancock of the Knoxville Utilities Board. His remarks were published in the newsletter of the Utility Arborist Association.

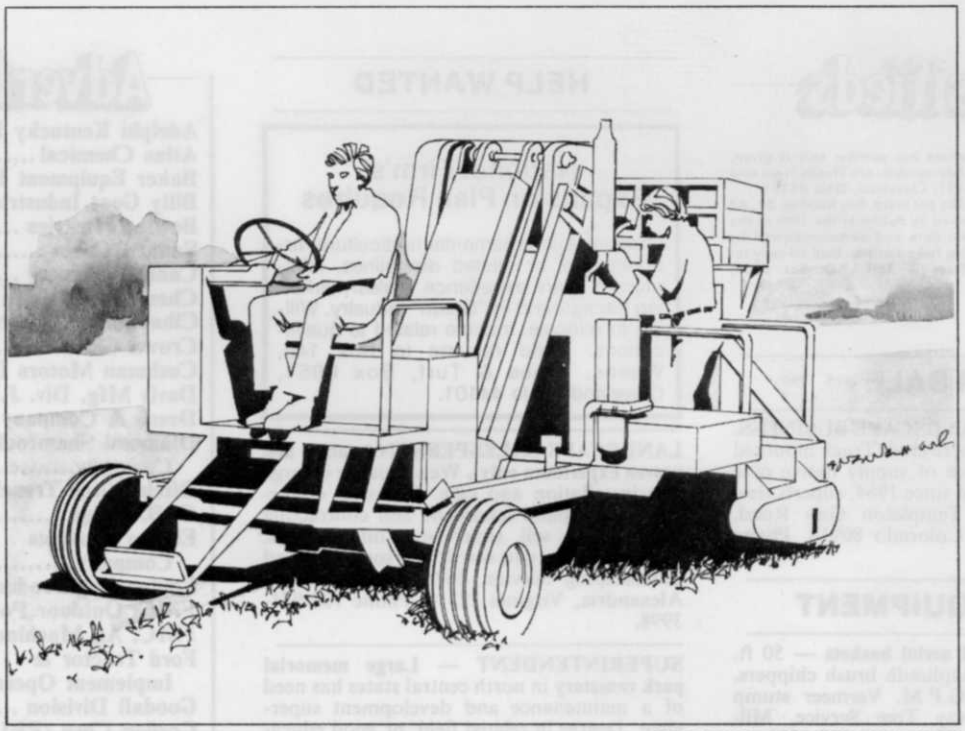
"The idea of planting low-growing ornamental trees on customers' properties to compensate for the removal of low-quality, fast-growing trees near power lines has been considered for some time," he said. "In the spring of 1973, a decision was made to begin such a program as a means of reducing the cost of maintaining line clearance throughout our area." He said the board has over 205 miles of transmission lines and over 3,600 pole miles of distribution and primary lines. The board serves all or parts of seven counties in Tennessee and has about 100,000 meter customers.

"One of the most popular and most attractive low-growing trees in the Knoxville area is the flowering dogwood, he said. "This tree was used to start the replacement program."

He said the purpose of the program is not to eliminate every tree that grows near power lines, but only to remove those that have an excessive rate of growth each year and are not beneficial to the customer or the landscape. According to a study made before the project was initiated, if trees that now need pruning away from lines once or twice annually are removed and replaced with low-growing trees that never need pruning, it would provide instant savings in the area of line clearance. "Therefore, whether a tree needs pruning twice a year or once every five years, a definite savings is realized with our present replacement program," he said.

"In actual practice," he said, "We have found that the removal cost for the trees is little more than the routine pruning cost would have been for that time. The cost for trees and labor involved in planting them has averaged about $10 a tree."

"Before the problem trees are removed and replacement trees are planted, a prepared written agreement is presented to the customer for signature," he said. "The agreement states, 'KUB guarantees a live tree that will put out leaves the spring following planting; the tree becomes the responsibility of the customer at this point.'



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"...to make more money in the sod industry, you gotta go to Princeton!"

Professionals, experienced and knowledgeable in the nursery and sod industries designed and developed Princeton machinery *to save you time and money!* Custom handcrafting insures consistent quality control and provides proven low maintenance cost!

Princeton Self-Propelled Sod Harvester

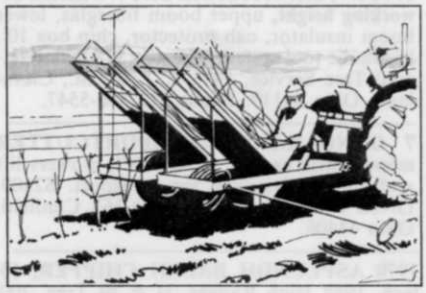
Save time, money, man-hours. Increase production! Now—one driver and two loaders do the work of a large field crew. Harvest up to *1,500 sq. yds. per hour* . . . completely palletized, ready for shipping.

Efficiency and safety features far surpass industry standards. Factory warranty on all parts and labor protects you for 90 harvesting season days!

Introducing—The Princeton "Tow-Boy"

The "Tow-Boy" is the first pull-type sod harvester to incorporate the dependability, efficiency and custom-construction of a Princeton self-propelled harvester . . . at *one-third the cost!*

Developed to meet the special needs of the smaller volume sod producer, the "Tow-Boy" operates behind any adequately-sized and equipped tractor.



The E-2 Transplanter

This remarkable new addition to the Princeton line of quality equipment can greatly reduce the time and labor required to transplant trees and smaller plants. Plant 600 to 800 6′ to 8′ trees per hour with one driver, one planter . . . up to 1,500 2′ to 3′ trees or plants per hour with one driver, two planters.

The E-2 Transplanter *can pay for itself two times over* in its first season.

For demonstration, information or literature, write or call collect: Don Bowman, General Manager
2625 Johnstown Road Columbus, Ohio 43219 (614) 475-8520

Princeton Manufacturing Company

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Classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, Dorothy Lowe, Box 6951, Cleveland, Ohio 44101.

Rates: All classifications 50c per word. Box number, $1. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment. Mail ad copy to: Dorothy Lowe, Weeds, Trees & Turf, P.O. Box 6951, Cleveland, Ohio 44101.

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ESTABLISHED LANDSCAPE BUSINESS. 3 bedroom house 3 acre land. Truck mounted 44 tree spade, source of supply native pine trees, yellow page ad since 1964, superb view Pikes Peak. 4975 Templeton Gap Road, Colorado Springs, Colorado 80918. Phone 303 597-6314.

USED EQUIPMENT

FOR SALE: 2 used aerial baskets — 50 ft. working height, 2 Asplundh brush chippers. Bean sprayer, 35 G.P.M. Vermeer stump cutter 1560. Parkway Tree Service, Milwaukee, Wisconsin. Phone 414 257-1555.

FOR SALE: 1 Yazoo Y.R. 60, used one season, $1500.00. 1 1973 Case tractor 14 horsepower, hydrostatic drive, with hydraulic tiller and mower, $1450.00. 2 R.M. 59 Wood's mowers, one new $400.00 — $250.00. 1 Air Broom leaf vac., 6 horsepower, 15' of 6" flex hoses, trailer or truck mount, like new, $475.00. Write or call JohnE. Hembrough, Old State Road, Jacksonville, Illinois 62650. Phone 217 245-6227.

1974 INTERNATIONAL SKYWORKER 50' working height, upper boom fiberglas, lower boom insulator, cab protector, chip box 10', hydraulic tool system, like new $18,000. Baetzold Tree Service, 1486 E. 174th St., Cleveland, Ohio 44110. Phone 216 486-5547.

7 GANG RANSOME SPORTCUTTER mowers with carrier. Cuts 15'8", mowers lift and fold hydraulicly for transport. $2500. Green Valley Turf Farms, Box 163, Canfield, Ohio 44406.

1970 ASPLUNDH BRUSH CHIPPER, 16 inch. 1968 High Ranger. H & M Tree, 300 Muir Rd., Willits, California 95490. Phone 707 459-2013.

FOR SALE 2 almost new, 20' self-unloading, hydraulic sod trailers, with 66 Int. tractor-new motor — call Seven Cities Sod, RR4, Davenport, Iowa 52804. Phone 319 391-1663.

1975 MODEL 500 HYDRO axe, brand new, less than 150 hours, has all extra features including air condition, $49,000.00. Call 914 895-3495.

FOR SALE: John Bean sprayer — stainless steel tank, model No. -6-50 with hose and nozzle. Landsco, Inc., Nowich, Conn. Phone 203 889-2372.

SEEDS

SOD QUALITY Seeds Merion, Fylking, Delta, Park, Newport, Nugget, Adelphi, Cheri, Glade and Baron bluegrasses also fine fescues. Manhattan rye grass. Custom mixing available. Michigan State Seed Co., Grand Ledge, Michigan 48837. Phone 517 627-2164.

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Graduates in ornamental horticulture, arboriculture, or related disciplines. Minimum 3 years experience. Sales/marketing background in "Green" industry. Willing to relocate. Income related to qualifications. Send resume to Box 145, Weeds, Trees & Turf, Box 6951, Cleveland, Ohio 44101.

LANDSCAPE SALESPERSON (mature and proven experience only). We specialize in large tree installation and care. Fantastic opportunity to expand landscape and contracting end. Design, sell, supervise. Collect, share. How much are you worth? Parsons Tree and Landscaping Service, 5628 Maxime Court, Alexandria, Virginia 22310. Phone 703 971-3998.

SUPERINTENDENT — Large memorial park cemetery in north central states has need of a maintenance and development supervisor. Degree in related field, or good education and five years of practical experience will be considered. Salary range $15,000-$20,000. All inquiries strictly confidential. Send resume, include education, experience, references. Box 144, Weeds, Trees & Turf, Box 6951, Cleveland, Ohio 44101.

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DEALERS WANTED: For a new revised patented method of installing drain tile without digging. Get rid of isolated wet spots for as low as 25¢ to 50¢ a foot installed. Instant Drainage* pipe only 12¢ to 25¢ a foot. Ideal for golf courses, planter boxes, football fields — systems presently installed. Call or write for information. Irrigation Supply, 31635 Aurora Road, Solon, Ohio 44139, ask for Dave 216 248-0095.

POSITION WANTED

HORTICULTURIST: Experience in spraying, landscaping design and maintenance. Desires position in management, sales or supervision. Reply Box 146, Weeds, Trees and Turf, Box 6951, Cleveland, Ohio 44101.

POSITION WANTED — Sod farm manager. 32 years old, married with 10 years management experience on sod farm. I am willing to relocate. Box 621, Lake Odessa, Michigan 48849 or phone 616 374-7261.

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Brush Control *from page 42*

Key factors that affect performance of this new brush control agent are the species present, coverage of foliage and stems, time of application, rate of application, and use of a surfactant. Rain immediately following an application may decrease effectiveness of control; no rain for at least six hours following treatment is necessary for best results.

"Krenite" by DuPont Co., Wilmington, Del., shows promise of extending the spray season for brush control in a number of areas, since the best time to apply it comes in late summer and early fall, according to F. E. Gonzalez, product development specialist. Last year, a number of utilities, municipalities, airports, railroads, and highway departments applied the compound on limited areas. It is expected that these areas will be checked closely this coming spring, to measure control and establish plans for broader use. □

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"Time is money in my book, so I feed trees with Jobe's."

Jack Fannin
Superintendent
Congress Lake Club
Hartville (Cleveland), Ohio

"Jobe's Spikes are clean and easy to use. They're a great time saver, so they're a money saver, too. Even inexperienced help can feed trees fast with Jobe's. There are no bags to lift or ingredients to mix. No drilling.

"We used them on Crimson King maples and Snow Drift crabapples. The trees had shown inconsistent growth for the past five years, so we applied 5 spikes to each tree the first week in November. By spring, we could measure the difference.

"Another advantage of Jobe's Spikes is very little loss through leaching. There's little if any run off in heavy rains. The fertilizer stays on target. Best of all, with Spikes we can keep exact records of how much fertilizer each tree receives over a given period of time, eliminating 'by gosh and by golly' methods."

Jobe's Tree and Shrub Spikes are easy, economical and effective. One spike per inch of trunk diameter feeds a tree for a full year. All you do is drive the Spikes into the ground. Tests at Purdue University have proven Jobe's as effective as drilled fertilizer. Write for the complete report.

Save time and money. Order Jobe's Spikes through your jobber or order direct. $30 per case (105 spikes) prepaid. Minimum order, 5 cases. $25 per case for 15 or more cases.

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THE EASY METHOD FOR PROFESSIONAL TREE CARE

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Don't pick baron* Kentucky Bluegrass just because of its rich green color or quick germination...

Pick baron because it meets all your needs.

When comparing bluegrass varieties, a good rule of thumb is. . .**pick the most versatile bluegrass you can buy.** Naturally you want a grass that has a deep rich color, a grass that has high disease resistance and one that blends well. You expect that. But you may need more from your bluegrass.

1. If your need is for a bluegrass that can take sudden drops in temperature. . .Baron endured -40°C temperatures in U. of Minnesota cold hardiness studies. It's recommended for every cold climate state in the U. S.

Or, if your need is for a warm weather bluegrass. . .in U. of Maryland and V.P.I.S.U. studies, Baron ranked among the top for endurance to hot and humid summer stress conditions.

2. If *Poa annua* is a problem, you'll certainly want to look at Baron. . . U. of Illinois studies ranked Baron one of the top three bluegrasses for competition against *Poa annua* and other unwanted grasses.

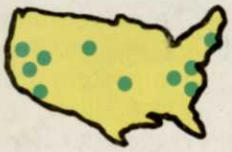
3. Maybe your need is for a tough grass that can take lots of wear. . .Michigan State University mechanical wear studies scored Baron among the top.

4. You're a sod farmer? You need a quick stand and good sod strength. . . look at the Michigan State University studies that placed Baron in the best group for rapid sod development and superior sod strength.

5. If you need to cut Baron Kentucky Bluegrass as low as 3/4" all summer long, go ahead! Baron's low growing blades bend down to a low angle escaping the mower blade. . . leaving more foliage for a healthier green plant.

6. A bluegrass requiring less fertilizer is always welcome. Baron consistently outperforms other bluegrasses in low fertility trials as documented by Michigan State University. Just three pounds of nitrogen per 1000 square feet applied annually in a balanced fertilizer. Substantially better than Merion and other high fertility requiring varieties.

7. When you need your supply of Baron, you'll find it's practically just around the corner. Loft offices, warehouses and distributors are located throughout the U.S. and Canada.



8. And the price is right. Compare prices of the top bluegrass varieties and you'll be pleased with Baron's price.

Pick a bluegrass that meets **all your** needs. You'll pick versatile, durable, and reliable Baron Kentucky Bluegrass.

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*U. S. Plant Patent #3186, Dwarf Variety

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